## COMPUT

## Generating

Veteran programmers seethe as youngsters pocket fat paychecks

> Watching a hotshot pr walk in straight out of school. and earn twice as much as you do is mighty hard to They call us the Cobol dinosaurs," says one West Coast programmer, who requested ano-nymity. "We've got people here that

learned C++ or object-oriented [languages] carning \$70 to \$80 an hour vs. \$30 an hour This envy is real and widespread. Employ ers are paying premiums for workers skilled in the hot products [CW, Nov. 13]. Prods. How 31, be's

grammers schooled in older languages Generation gap, page 76

## Want WordPerfect?

Corel seems to: Novell promises to reveal buyer this week By Lies Pirarille

Novell. Inc. this week will announce it finally has a buyer on the hook for the former WordPerfect

es developer Corel Corp., a late bidder, has emerged as the most likely buyer for the division and its suite of desktop applications. "We be-lieve the discussions we are in with Novell are in the final stages," s Corel

For millions of WordPerfect Office users, the deal would mean continued support for the application suite. "WordPerfect users are ripe to be upgraded or even just served continuously," said Jeffrey Tarter, editor of "Softletter," an industry

newsletter in Watertown, Mass. Ottawa-based Corel is expected to grab Word Perfect at the fire sale price of \$250 million, sou es close to the negotiations said. Novell paid \$855 million for WordPerfect more than 1% years ago. Tarter said there are two likely reasons behind the Corel buyout, First: Corel may want to broa

en its software portfolio beyond the graphics

"The theory is that whoever has the most titles wins," he said. "And there is some truth to that, especially when competing against Microsoft."

Second: WordPerfect's huge installed base of users provides a lucrative op-

portunity for the buyer "There is a ton of money to be made over the next three to five years just by filling ongoing orders for older products in this installed base," Tarter said. According to Novell, the Word-

Perfect division has sold 25 million units to date. Others had expressed serious interest in acquiring WordPerfect, Bain Capital, Inc., a venture capital firm in Boston, spent the past two months WordPerfect, page 121

### Lotus bulks up Notes 4.0 for mission-critical push

ORLANDO.FLA As Notes networks grow up, Lotus is trying to make its groupware pack age more enterprise-friendly. IBM subsidiary Lotus Devel ment Corp. last week said it will add

several features to the recently released powered-up Notes 4.0. These cover the ability to cluster Window NT-based Notes servers, the addition of frameworks for developing World Wide Web-enabled applica tions, and the ability to integrate IBM's MQSeries messaging middleware and SAP AG's R/3 client/server software (see steey, page 6).

The moves were designed to make Notes servers more available Notes, page 16

CHART TOOL

BATA QUERY TOOL E DRAW/BIAGRAM TOOL

B file viewer COMMENT BOX TOOL

**III** PROJECT SCHEDULER SPREADSHEET

▶ See story, page 16

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## SAS on tap with apps

Client/server wares to ease cross-platform data access

By Julia King SAS Institute, Inc. is about to step out into soft-

ware's ready-to-wear market with its first line of packaged client/server applications. The Cary, N.C.-based company confirmed it will announce next week two business applications that it hopes will extend its reputation be-

. The first will be a financial package, the SAS Business Solution for Pinancial Consolidation and Reporting, that will be released in March. A SAS

man resources package will follow in the Both applications are written in SAS' pla independent programming language and were de-nigned to be used with virtually any other ven-

dor's transaction-oriented software SAS intends to market the packages as applica tions that complement - rather than compete with - software from enterprise client/server vendors such as Oracle Corp., SAP AG and

opleSoft, Inc. With its 29,000 cust

## IS must deal with cheap 'net devices

By Kim S. Nash

Two little-known hardware makers plan to targ IS - rather than the home consumer - with their forthcoming Internet appliances. These stripped-down PCs are built strictly for on-line

Rather than putting the 'set devices on enddesktops, some information systems departments

are expected to deploy them as kiosk-like boxes in local outlets of banks, retailers and supermarkets. The chore of

meintaining and concting the appliances to internal systems also will fall to IS.

This week, TrainsPhone in Ottawa will show a preproduction Infernet device at the Demo 96 show in Indian Wells, Calif. And last week, Sun-River Corp. in Austin, Texas, announced a me-chine it has dubbed Internet Terminal. Both products are due out in March

So far, the most prominent 'net appliance evan rlists - Oracle Corp. and Sun Micr Inc. - have hailed the boxes, some of which will cost \$500 or less, as perfectly suited to casual home users. Yet since the jest device concept burst on the scene at Comdex/Fall 36, it has been

sted as much as it has been tousted.

### News

NEWS IBM Consent Decree Now that the IBM Consent De cree has been lifted, ISSC ould be able to compete with EDS and other services grants.

Sun/Apple reaction sible Sun/Apple merger.

sly problems force IBM to delay announcement of its new ThinkPad line and other wares.

of 3-D graphics systems.

COMPUTER INDUSTRY Encryption policy A coalition of large vendors is still trying to persuade the Clin-

Mac: A citizen at last? The Sun/Apple deal makes sense, Bill Laberis says.

n, Michael Fitze



#### **Choice Cuts**

Users of network management packages generally are habby. But vendors have to fill some gaps in their traduct lines See

Buyer's Guide to Network Management. page 85

A shortage of skilled managers who can master networks is creating high demand, high regard and

high salaries. See Careers, page 104 Personal Property lies

84%

Hot Hann 74%

71%

SAP R/3: Dream or nightmare? SAP detractors should stop whining and implement R/3 correctly, says Jeff Coomer, an IS chief. Just the response you'd

expect from vet another "SAPaholic," counters William Zeitz a former CIO. See In Depth, page 100



#### **Technical Sections**

SERVERS & PCS

Mainframe upgrades IBM is releasing updated ver-sions of its VSE and VM software with graphical user interfaces and other features.

**Pentium Pros** Brace yourself: A torrent of Pen-tium Pro systems for Windows NT is hitting the market. SOFTWARE

Review: Paradox 7.0 ively sim





THE ENTERPRISE NETWORK

NetSys and Ascend will lead the parade of vendors at Com Net '96, to be held this week

A two-network plan The Williams Cos.' strategy ac-tually is a tale of two competing

Server 3.51.

THE INTERNET A Web site

S EDI lives EDI IVVES
Electronic data interchange
(EDI) is ripe for an injection of
internet technology. But
blending new, less expensive
communications with EDI's

CORPORATE STRATEGIES

Macintosh-based workflow TransCanada workflow system - a rare move in a see ment that is Unix and PC

HI, CIO at Dial-A

Mattress, is getting little rest these days; he is orchestration

### Features

F.Y.I.

Climbing the ladder Many executives do stints as consultants on their way to the

IN DEPTH

CAREERS sionals must contro

mpany Index	15	
torial/Letters		6
	J 15	
	12	
ock Ticker		





### DATA CONVERSIONS THAT ARE SHEER MAGIC

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ng user complaints about hand and ist strains from using a mouse? Hunter ital in Los Angeles has a feet-operated traption called the No Hands Mouse. The left pedal provides 360-degree control of the cursor's direction; pressing harder makes the cursor go faster. The right pedal is for clicking.

equent Technology in Blace, N.Y., wants to make the output from text-to-ceech software round a little less robotic. The winder claims its Elequence organn has natural-sounding speech that can show various degrees of arreness, breathlaress, excitement or boredom.

Quality of Life is a \$16 Windows software package from Dataemiths in Man-ville, N.J., that "generates ideas for fun, interesting and life-enriching things to do." Users can set time and cost criteria and then ask for ideas — or just click on the "spontaneous ideas" button.

Are sounds from your multimedia PC both oring co-workers or your skeeping family at home? Consider SoundJack Sr. from Enhance Cable Technology in San Jose, Calif. The \$25 kit includes stereo headmen and an audio control knob to turn



PrintScreen a.o for Windows is a \$30 package that lets users print any Windows screen with a single keystroke — an old DOS feature that Microsoft left out of Windows. The wendor of the "if you can see it, you can print it" applica-tion is JE Software, a division of Janesway Electronics in Mount Vernon, N.Y.



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neral entegory (author, blisher) L. Internet for Dummies, 2nd edition (John Le-

vine, IDG Books) 2. PCs for Dammies, 2nd edition (Dan Gookin, IDG Books) 3. World Wide Web Yellow Pages (Andrew Bussey,

New Riders)

4. Upgrading and Repairing PCs, 4th edition (Scott MueBer, Que)

5. Janu with CD-ROM (Tim Ritchey, New Riders)

Operating systems
1. Window 95 for Dunwier (Andy Rathbone, IDG Books)

ichen 5 for Window for Dummies (Steve Nelson, IDG Books)

L. Macs for Dammies, 3rd edition (David Pogue, IDG Books)

rom Broin Teck, an advanced microprocessor design firm based in Vancouver, B.C. The appp calendar year was, for the most part, a disappointment for Brais-Tech shareholders. While the Dow Jones surged to record highs, Brais-Tech's stack plasmated to record lows. It seemed that BraisTech took two steps backward for every step forward."

bibations of off-bast news, lists and anecdotes to substitution com COMPUTERWORLD (http://www.computerworld.com) January 29, 1996 apan's NEC Corp. has developed a flexible, snake-shaped robot that can crawl into the

rubble of earthquake-damaged buildings to rescue people. It moves like an inchworm and raises its TV-camera head to look around.

An executive search firm has can

related company
...talent base is small and elusive

Vice president of content ...acquires and creates programming to keep users on-line

Chief technology officer
...position created because
companies have found their chie
information officers "overwhelms
with technology"

Mergers and acquialtions execut ...has re-emerged as a hot com modity due to industry consolida

Human resources executive ...victim of downsizing and out-

sourcing Administrative assistant ... Thas lost out to the notebook

...despised by American business

Vice president of diversity
... "effort lost out to delivering a
fatter bottom line"

ere: Orielan & Testers, Inc., Claveland

ctoid of the week

Only 34% of the general public poted in the last national elec-tion, but a Votclink poll shows that 86% of on-line "netizens" di so. A separate poll in California finds that, although most vot stal media to get gn information, 9% got ation from on-line vices and 25% arrest to t

Source Valedoni, Bui

### Decree lifted: ISSC gears up

By Thomas Hoffman

he U.S. Department of Just has finally unshackled IBM from a 40-year-old consent de-cree that had placed a multitude of legal restrictions on the firm's PC. workstation and services busines Parts of the antitrust decree that deal

with IBM's mainframe and AS/400 busi-ness practices were left intact, however, on the grounds that IBM still holds a monopoly in those markets.

Although IBM is keeping mum on its

plans, observers say the government's move should help IBM's Integrated Systerms Solutions Corp. (ISSC) services unit compete more effectively with ser-vice titans such as Electronic Data Sys-tems Corp. and Anderson Consulting. For example, the 1956 Consent De ree required ISSC to purchase IBM hardware and software at market prices, while rivals such as EDS were able to buy from IBM at lower costs throug

"If [ISSC] can shave a couple of points off the hardware and software margins los big outsourcing deals], that could result in a lot of business downstream," said Tim Bourgeois, an analyst at International Data Corp. in Francingham, Mass.

Putture unknown An IBM spokesman declined to com-ment on ISSC's future. The spokesman also declined to comment on Wall Street rumors about IBM's interest in acqu ing services rival Computer Science Corp. (CSC).

Those numers began swirling two weeks ago, after IBM Chief Financial Officer Richard Thoman told analysis that IBM — with a \$13 billion nest egg it has built up — "clearly wants to consider buying services businesses."

The Armonk, N.Y., computer con ny already made some services-related acquisitions last year, buying Chrysler Systems Corp. and a GE Capital Corp.

Systems Corp. and a GE Capieai Corp. maintenance unit, for example.

Revertheless, analysis are split on whether IBM will make a play for CSC, a stalwart in the federal government areas. CSC's 30,000 employees and strong European presence would go a long way toward helping IBM fill out its global services ranks, an area many ob-servers say is understaffed.

For example, one of the main reasons Xerox Corp. picked EDS over ISSC in a 1994 global outsourcing deal was because EDS had more consistent staffing levels around the world than ISSC, according to sources who were close to the deal.

A spokemum for Xerox claim those assertions are "too simplistic." He added that additional criteria, which he declined to detail, led to the selection of



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### IBM building middleware bridges to R/3, Internet

#### By Craig Stedman and Julia King

IBM will seek to further raise the profile of its MQSeries middlere is coming months by linking ous mes luct to the Internet and SAF G's R/3 client/server software.

MQSeries guarantees delivery of messages between different apons and can retrace its steps and start goes awry. It is entergng as a key part of IBM's net-

work computing strategy. Messages are stored in queue stil a connection is esta etween systems; processing can continue while a response is

The linking project will give R/3 and internet applications a ready-made, reliable way to get at transon data stored on maintrac d other back-end servers

The R/3 and Internet ties are MCSeries Link for Notes that IBM shipped recently (CW. Jan. 8]. That code, which is expected to support Notes 4.0 by midwear

plans detailed last week turns data requests into MQSeries messages that find and fetch the desired information SAP is working alongside IBM on the R/3 integration.

sources said Steve Craggs. MQSeries business ager at IBM's software lab in

Hursley, England, confirmed that so R/3 link is in the works but do't disclose detai The sources said it will be jointly announced with SAP in March as a way to connect the German company's Application Link En-

ing (ALE) technology to non-R/3 environments. Released in October, ALE currently supports messaging only between different R/3 applica-

\$356 million

\$43.50 per share

tions. Lashing R/3 together with

other systems requires users to write their own interfaces, which can be "a horrendous problem, said Gary Banks, director of the center of technical excellence at Monsanto Co. in St. Loui On average, it takes Me up to four months to develop and

test a custom interface for comting between systems

With products such as MQSeries, "the neat thing is you're doing interfaces without programming he explained.

Reacting to trend IBM plans to follow the R/3 link late this year with an internet gateway into MQSeries, Cragge

But the explosion of interest in using the Internet may push IBM to release a tool kit version for de velopers in the second or third quarter. A similar approach was used with the Notes link last wear. The Internet gateway should allow any Hypertext Markup Lan-

Q2 for OS/2 and AIX: Q3 for

es to IBM's CICS and IA Adyear for UNS; late this ort for IBM's System Object d object request broker due late this year

guage application to be connected to MQSeries, Craggs said. beneficial, since we already have the interfaces in place for MQSer-Security provisions will be inies." Goldman said. cluded for identifying the middle The middleware's guaran ware as a friendly face to corpo-

elivery features are also critical because the exchange runs more than 300,000 messages a day through MQSeries, he added. The various links are part of an effort by IBM to move MQSeries "out of the mysterious maintrame space" that it initially was relegated to, said Sally Cuseck, an anahas at The Standish Group Inter national, Inc. in Dennis, Mass.

See page 39. bility to the Internet "might be

## Apple/Sun deal still in shade

By Lisa Picarille

week amid a swirl of conflicting reports that Apple Computer, Inc. was on the verge of being bought by Sun Microsystems, Inc. Although some rabid Macintosh devotees denounced the pos-sible deal as the death of the Macintush, others conceded that Sun may be in a position to help perpetuate the life of their (avorite machine. Still other Macintosh users said they would wait for the

ink to dry before judging the mer-Mac is here to stay Apple's core users - deskt publishers and graphics and video professionals - seemed confi deat that no matter whom Apple might team up with, the Macin

its of any deal.

teeh wouldn't go gwan We are somewhat concerned but where we are using the Mac for desktop publishing - and Apple is so established in that area — it's not realistic to think that would go away. Apple has well rooted market penetration in that

ares," said Christopher Candels ons manager at Imp ms, a Rosyln Heights, N.Y., rketing services and sales pro on agency. It has about a dog

en high-end PowerPC-based Pow-But at Dartmouth-Hitchcock

rate firewalls, he added

The potential of tying MQSer-

ies to the Internet "is definitely in-teresting," said Steve Goldman.

director of technology planning at the Chicago Mercantile Ex-

The futures exchange uses the IBM middleware to enable mem-

bers to submit transactions to

Being able to extend that car

clearing systems in real time.

Medical Center in Lebanon, N.H., which has more than 2,500 Macinshes. Apple's situation is being vatched closely and with great

the center's director med to gather all of his information systems people for a

meeting about the Cupertino, Calif., company's future and what it means for the medical cen-We plan to look

at the current sit tion and try and develoo some strate gy," Priest said. "We are a bit nervous because we have a very big investment in the Mac. Apple has been a go

we would like to see them be successful and expand even further But right now we just have to wait

View, Calif-based Sun would

strengthen Apple's position in the corporate market. "I would jump up and down and cheer," said Mike Builey, a sys-tems analyst at Lockheed Martin

Missile and Space. an aerospace firm in Sunnyvale, Calif. that has more than 6,500 Macintoshes. "It would change think it would give us a lot more confidence that the Apple

product line would be around for long "If Apple and Sun get together, it would give Apple more credibility in

the business marketpince," said John Papa, a partner at The Carson - Group, New York-based fi

company that has more than 100 Macintophes and several Sun SPARCstations. There would be a better counci tion between the front end and

s. Robertson CECO, a ker of prefabricated steel igs, has 12 Sun sers and about 400 worksta

\$424 million

\$32.25 per share

Will merger cast shadow?

levant to us, so we'd prefer at they set do it," said Mark ctor, vice president of IS at Bon Pain Co., a Boston-

it will likely take a lot of

oney and human resources salvage Apple, and the precould hurt Sun users if i ompany's well-es focus, Focios

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## 'Universal remote' eases access

#### Comsat device is lightweight, wireless

#### By Mindy Blodgett

for the untethered user who freams of wireless access to the erate home office from even the most remote corners of the world, that reality is now one step

Last week, Consut Mobile communications in Bethesda. Md., announced the world's first personal satellite comm system, called Planet 1

The system, which will allow and voice and data commu cations via a portable, astebo size terminal, will be offered in March in parts of Africa, western relia, Japan, China and Ri sia. Coverage in the eastern half of the U.S. will follow in August: the service will be offered to the rest of the world in the next year or so, Coment officials said.

The service is likely to ap to international business travelers ious for digital voice service and instant access to their voice and electronic mail.

#### Linkage, not luggage Currently, users of satellite comation connections must lug ground splicase-size systems with mas. In the Consat system. ons is in the flip-up part of

the portable device.
The satellite-based service will be especially helpful for users in areas of the world without teleone or cellular coverage, Com-

sat representatives said. "We think this service is pretty interesting and pretty exciting.



id Virginia Brooks, an analyst at Aberdeen Group, Inc. in Boston. "This is just the beginning of something I think we are going to see a lot more of. This is the first big step in combining voice and

a with a satellite link The service will work by using a device that looks like a phone at tached to a notebook computer. The terminal, which weighs just under 6 pounds and will cost

\$2,995, was designed by NEC America, Inc. Eventually, the company hopes to offer smaller devices the size of cellular phones. Planet 1 will offer voice, fax, brief data transmissions and Email access. At a throughput rate of only 2.4K byte/sec., the transmissions will be too slow for long

The service is provided through mobile terminals, a regional phone system and four marsat-3 satellites, which were designed to use bidirectional signong Earth-based station Comsat officials said the service will cost \$3 per minute, pending approval by the Federal Comutions Commission, Com-

sat will seek agreements with worldwide telephone service carriers, which will bill the user. Those service agreements are crucial to making the system work, said Andrew Seybold, editor of the "Outlook on Communiin Boulder Creek, Calif. Other-

wise, billing will be confusing and usage restricted, be said. The Comsat service is the first large-scale personal satellite communications system to come to market. Many others, including Motorola, Inc.'s Iridium satellite project, are still in the planning

### Shortage delays new Think Pads

#### By Mindy Blodgett

What is old is new again for users hankering for new ThinkPads IBM PC Co. has delayed the release of a line of low-end Thick-

Pad notebooks becrose of a problem with supply, according to company off-Sources

the company said IBM was concerned that not enough notebooks had been produced in time for the announcement. IBM didn't want to

make its first important as nouncement of the year and then not have the supply to back it up.

IBM had planned to announce new 90-MHz Pentium ThinkPad 760s — the 760L and the 760LD - this week. But it now plans to delay the announcement until enough notebooks are ready to be shipped, which should be in a few oka the sources said IBM, already the market leader

soft SNA Server Version 2.11 and the Windows 95 Service Pack are free main-

Switched-LAN monitoring

Frontier Software Development, Inc. will this week introduce a Remote Moni-toring (Rmon) architecture called Unison for diagnosing switched-LAN networks.

Key components include the first prof

for Fast Ethernet connections plus nev

for Fast Enterior connections software for monitoring traffic by switch or by port. The Chelmiford, Mass, Ruon specialist is adding a SQL-based trend analyzer and Switch Monitor tool to

its NetScout Manager program. Adminis

trators could then check traffic throu

popular switthes from external prob-

Datalogix lands record deal

Datalogia International, Inc. in Valhal-

such as the new Netscout Fast Ethernet

trosper upgrades

hopes to capture the imagination of users eager for premium features at low-end prices, according to industry observers. The Pentium ThinkPad 760s will have 10.4in color screens. nickel batteries with three- to six-

hour life spans. \$10M-byte bard drives and 8M bytes of RAM. With a CD ROM drive, the machine will weigh 7.1 pounds; without the drive, it will weigh

about 6.5 pounds Pricing is expect ed to start at about \$4,200 but could go as low as \$4,000,

Separately, IBM plans to announce a price reduction for its entire ThinkPad line this week The current price range for ThinkPads is \$5,349 to \$7,500.

Although the new prices aren't set, an IBM spokeswoman said prices will be reduced by up to \$900. The ThinkPad 760CD is ex-pected to drop from \$7,500 to out \$5,600, and the low-end inkPad 760C could go from high-end notebooks, now \$5,400 to about \$4,999.

#### reverses self, kills OS/2 for PowerPC

Now that Bibb is indeed scrapping the PowerPC version of OS/2, in-dustry observers are wondering how committed the vendor is to the PowerPC chip architecture. Bib plants to continue developing the In-tel version of OS/2 but is dropping the RISC version because of lack of demand. The PowerPC version of OS/2 was due to ship this month, after more than three years of delays and highly publicized denials about plans to kill it. Without it, IBM has virtually no desktop operating system presence on the PowerPC, which now runs Micro-soft Corp.'s Windows NT, Apple Computer, Inc.'s Mac OS, Sun Mi-crosystems, Inc.'s Solaris, Novell, Inc.'s NetWare and IBM's AIX.

#### Sybase simplifies licensing

ing Feb. 5, users of Sybane, Inc. do es will need to specify only how my servers they will have running and the total number of possible users at a site. While the Emeryville, Calif., compony's simplified ficensing may not save us-ers money, it will spare them the uncer-tainty of figuring out what they spend under the current, complex licensing

#### BM raises Amdahi prices

ides for its SNA Server IM has quietly imposed new software icing that could mean increases of up to e 2.11 and Windows t on MVS and relat ers of Amdobi Corp.'s high-end main-

frames, according to Gartner Group, Inc. estimates. The pricing change affects Amdahl's System/390-compatible models with 10 and 12 processors. The new prices apply only when a company pur-chases or upgrades to the Amilahl boxes.

#### Microsoft improves 'net link, upgrades SNA Server out Corp. last week released

of \$13.9 million for its second quarter along with the largest software sale in the manufacturing software vendor's history. The \$16 million sale was to \$12 billion Aluminum Company of America in Pi burgh, which is standardizing its proc

ternet connectivity, support a wider array Gemms client/server software. of platforms and devices and fix minor flaws. The Service Pack No. 1 for Mic Compaq posts results

Compaq Computer Corp. earned \$789 million on revenue of \$14.8 billion last pered with \$867 million on rev nue of \$10.9 billion in 1994. Earnings fell primarily because of charges associated with the Houston PC staker's purchase of two networking companies, officials said.

Unisys down by \$700M Unlays Corp. lost week reported a

urth-quarter loss of \$676.8 million. which includes a \$561.9 million restructuring charge that covers the cost of lay-log off 7,900 people. Revenue grew 5%, to \$1.84 billion. For the year, Unitys lost 8624.6 million, compared with a \$100 mil-

Xerox drops a billion Xerox Corp. blamed a \$1 billion fourth-quarter loss on the cost of selling its insurance business. The company made \$311 million is the same period a year ago. Sales for the fourth quarter were \$4.76 billion, up slightly from \$4.59 billion.

SHORT TAKE Netscape Communica-tions Corp. and America Online, Inc. declined to comment on rumors of a po-



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## 3Com ups switch flexibil

Cellplex 7000 to handle switched. Fast Ethernet

By Bob Wallace

At ComNet '96 in Washington this week, 3Com Corp. will announce plans to make its flarship ATM switch far more flexible by

orting switched and Fast Ethern ologies, Computernorid has learned. The upcoming products for the first time will give users a way to implement 3Com's Cellplex 7000 switch in backbone net-

We use switched Ethernet and are m ing to Fast Ethernet, with an eye toward ATM," said Steve Flis, network man MetroWest Medical Center in Framing

ham, Mass. "So an ATM switch that coul support those technologies sounds ideal for us. We're putting switching everywhere

to support applications such as teleous Transfer Mode (ATM) is an emerging high-speed switching technol-ogy that networking vendors are imple-

enting in their products. It isn't widely ployed in enyet,

CIMI Corp., a Voorbees, N.J., said 3Com is king a "very

ev're still a generation behind IBM." 3Com's long-range ATM plans still pla one links via the Cell sch, rather than the 25M bit/sec. ATM

rees said the new products will include the following • The 7200 module, which supports 12 10M bit/sec. switched Ethernet ports and two 155M bit/sec. ATM ports. This will enable

users to link smaller switches and/or small groups to the 7000 switch. The 7600 module, which 'supe 100M bit/sec. Fast Ethernet ports. This duct will prepare the 7000 to be linked to Fast Ethernet backbones, which are in-

The ATMLink PCI card, which is an

adapter card that will support 100M bit/sec. and 155M bit/sec. connections arces say it will cost between \$800 and \$1,000. 3Com already offers ATM adapter is that work with other bus rsion 2.2 software for the 7000, which will enable the switch to support a type of ATM service called alternating bit rate. width is used only wh

3Com also will commit to making the 7000

amount of traffic it can handle from 2.5G bit/sec. to 50G bit/sec. That effort ntimue into 1997.

tion, 3Com will use the ComNet ow to stress its commitment to Chipcon rp.'s ATM concentrator, which lets not rk managers support up to 12 25M/sec. deskiop connections. Those are aper than the 155M bit/sec. links. rces said the 7200 and Version 2.2 are will ship this week, while the new ter will ship next month. The 7600 is sted to ship in the third quarter at

at \$1,000 per port edected is testing a way to join



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### SGI refreshes line, vaults over rivals artists, they will attempt to cre

th an aging set of offerings ing its growth, Silicon aphics, Inc. (SGI) last week un-led a refreshed line of products utations, servers and tensional graphics sys-

ns - that get performance SGI in Mountain View, Calif., inurodaced the InfiniteReality will speed up our graphics work graphics engine that runs on its Onyx and Power

Onyx computers. It also released Indi-

nese systems vaults SGI ahead of rdware competitors such as rosystems, Inc. and Hew

lett-Packard Co. and graphics ri-vals such as Evans & Sotherland er Corp., analysts said. The R10000 in arguably the stest processor on the planet right now. And with these new graphics, the InfiniteReality and

the Impact lines ... really do bring [SGI] back to the point where they were three years ago, and they could say. We can do things obody else can," said Andrew Feit, an analyst at Dataquest, Inc.

Users empowered Users applauded the upgrades. We're very excited about the InfiniteReality (system) because it

> for the visual information technologies group at Tex-

stions that contain R10000 pro-ssors from Mips Technologies, and gas business, we work with data sets that always seem to be a little too large for the computers to handle. It's refreshing to know

we can get performance like this." SGI has provided "another level of power" for artists who create 3-D images, said Phil Nersy, product marketing manager at Dis-creet Logic, Inc., a video specialeffects software developer in Cambridge, Mass. When you put this kind of power in the hands of

SCI in March will release up dated versions of the Challenge and PowerChallenge series that also harness performance gains from R10000 processors. Prices won't increase, so symmetrical multiprocessing machines can play to a commercial Unix market. The new servers that run on the Irix 6.2 operating system

make SGI the second vendor after Digital Equipment Corp. to bring full 64-bit capability to co cial users, said Jean S. Boss an analyst at International Data Corp. in Mountain View, Calif.

The systems can directly address terabytes of data instead of hitting the 4G-byte limit of 32-bit erating systems. Boaman said SGI is giving users some flexibility because 32- and 64-bit applications will be able to run on the 64bit Irix operating system tributed to this report.

A German travel agreecy picks Tandem servers. See page 45.

## Microsoft spruces up SMS for NT push

Server will gain remote management SNMP links in late '96 case." Nordstrom uses SMS on port the remote manag

By Bob Francis As Microsoft Corp. gears up to push Windows NT and Back-Office into the enterprise, the company is updating its Systems Management Server (SMS) with mote management features and aks to SNMP network manage-

ent platforms. Microsoft this week will ance features that will be in ded in Version 1.2 of SMS. The educt is scheduled for release the second half of the year. Key for users will be rea

management support for Win-dows NT and the ability to monitor SMS alerts from Simple Net-work Management Protocol (SNMP) network management consoles, such as Hewlett-Packard Co.'s OpenView and IBM's

The new features may not provide a clear indication of Micro-

soft's direction for SMS, but they

me corporations use NT as both a client and server operating system. They need SMS to sup-

pability that exists for Windows and Windows 95, said Waverby Deutsch, an analyst at Forrester Research, Inc., a research firm in Cambridge, Mass.

Users demanded It Users have been especially vocal about this improvement.

They've been hearing from a lot of us," said Larry Shaw, PC coordinator at Nordstrom, Inc., a Seattle-based retail chain. "I think Microsoft wanted to get the word out that they are going to have its network of 80 servers and But even companies that de-

sloy Windows 95 can find an adtage in the addition of remote indows NT management. Gary Darby, a network design ager at Pennaroll Co. in Houston, said most of his clients are wing to Windows 95. "But it's

od to know the feature is there. so we can do 'lights out' opera-tions with our NT servers," he

The new release also pr an SNMP component for firms

with SNMP management con-soles. Systems administrators will trators will be alerted about critical events. such as a hard-disk failure, on NT systems from their SNMP conles. But network managers will are to use the SMS console to age the event

Show said adding bare-bo network management functional-ity to SMS will help integrate the server software with the compa-ny's Sun Microsystems, Inc. Net-Manager console. "It will give the gers an indication of a prob-

SMS offers some tools similar to those from network administra"It's good to know the feature is there, so we

can do 'lights out' operations with our NT servers.

-Gary Darby network denian manager, Pennzoil

tion and system utility vendors such as McAfee Associates, Inc., Intel Corp. and Symantec Corp. But it doesn't offer certain product features the rivals provide such as software metering. Still, Microsoft has an ad-

age in bundling SMS with Win dows NT Server and BackOffice. And while it continues to add fea-tures to SMS, other LAN tools vendors have been building bridges to SMS.

Scole & Bobbage debuts sys-tems management software

4.500 titles 4,500 titles \$47,300 for some users Saa per node for

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## Single-fee licensing

Microsoft induces Windows migration via payment plan

By Shart J. Johnston

in an effort to get the ball rolli a corporate cust not Corp. is giving some uners the chance to pay a single license

The "Windows 32-bit Family faintenance" plan lets users h between the two operating ire upgrades of those systems laring the next two years. The fee will vary, depending on how many

n't already have licensing and alt, it would cost about \$230 , general manager of organi-mal customer licensing at Mi-

dy, Windows and NT eren't covered under a single mintenance plan. The cost of witching from Windows to NT was the same as buying NT for a

"We already have a [license] regram [that includes] Windows 55. We could put it on every workm. [but to deploy! NT we ould have had to pay for it," said

Componies mis HT Ser NetWare, See page 57

mation systems at Darby Group, Inc., a medical, dental and erinary products distributor in stbury, N.Y. The

plan may belp the decide hat to do, he said. The plan covers stem upgrades to Windows NT 4.0, which will add the rface to NT. It is

due by midyear. The

next major upgrade

Caire) and Windows 95 (cod

dent of systems at Microsoft.

of NT (code-n



costs more per user for companies that plan to adopt only Windows 95 on the desk-

top. But the cost savings may be considerable for corporations that plan to gradually move to Windows NT (see chart). Users can still buy maintenance contracts just for Windows or Windows 95: these would cost about

\$130 per user in the ne 10,000-user example. ned Nashville) in 1997 also will It's good that we can move bebe included in the flat-fee plan, een Wandows 95 and NT," but said Paul Maritz, senior vice presithe option isn't likely to cause a Microsoft customers who alendy have maintenance plans will be able to upgrade to the new flatfee approach for about \$100 per user, a Microsoft official said. For

re-examination of company plans to deploy Windows 95 on most uper PCs, said Jim Lisiak, senior software engineer at Chevron Information Technology Co. in Sun Ramon, Calif. Chevron plans this example, if Bavoso's current plan year to install Windows 95 on still had the full two years to run. about 60% of its approximately he could upgrade his users to NT 25,000 desktops.

de prices apply to users of Microsoft's Select plan, which is the company's highest volume

System	Pence PER CORE	Covers
Wle32	\$230	Windows 95 or Windows NT, plu any updates for two years
Windows 95	\$130	Upgrade to Windows 95 and two years of upgrade maintenance
Windows IIT	\$315	\$185 upgrade to Windows NT

cial system, comes Internet-ready with Web-friendly features such

Netrcage Communication

to handle secure true

workstation, plus \$130 for two year of upgrades (under previous plan)

the Web server costs \$12,200. Jeff Ziff, an HP product manager, said Palo Alto, Calif-based HP will of

HP is trying to catch up with vendors such as Sun that have generated a lot siness, analysts

said. But this anware ICW, Jan. 22]. Netscape's ement was untmerce Server was designed ctedly lacking a future vision for the company's overall internet over the internet using encryostrategy, said Steve Audi dent of Zona Research, Inc. in Redwood City, Calif

HP Unix server but not why peo-ple should think of HP as their for discounts to cust trade in Sun or Sil-con Graphics, Inc. Internet servers.

Internet vendor, Auditore said. Aside from its Unix line, HP is trying to bring its Intel Corp-based PC set in the secon HP's plans call for

preloaded with LAN and WAN cards and drivers. The syst will target small busine

ses on the Web On the sec

t for application partitioning (in the third quarter)

## Gupta readies visual 4GL tool

senior systems analyst at Illinoi Power Co. in Decatur, Ill. Thosa

large applications currently re

quire powerful PCs, while the

large amounts of data being moved tax networks to their lim-

its. Splitting up applications and using transaction monitors to di-

rect data traffic should help that

partition applications

into three tiers - s

PC-based client, an ap-

plication server and a

se server — will make Centurn appealing for projects larger

than SQLWindows could handle

said Judith Hurwitz, president of

Hurwitz Consulting Group in

Home run needed Gupta needs that boost in the

wake of two years of financial loss-

and Powersoft Corp.'s Power

dities are planned this year.

Builder, for which partit

By Frank Hayes Hoping to attract corpo

roung to atract corporate sys-tems developers who need to split high-end applications among mul-tiple computers, Gupta Corp. last week unveiled the long-avaited 32-bit successor to its SQLWindows visual development system. Gupta's new \$4,995 Centura runs all existing SQLWindows code

and adds the ability to that rup on the inter

net. Centura also sports an im proved object compiler and team programming features. Data replication is provided by an add-on module called Centura Ranger

that costs \$495 per user. But most important, Centura lets developers move part of an application from a PC to a more

powerful application server — a capability that high-end users are starting to demand for perfores and heavy competition from Microsoft Corp.'s Visual Basic "As we've tried to scale up maor SQLWindows applications to 1,500 users, the No. I concern is

"That low end of the market is a performance," said Randy Allen, a real ghetto. [Gupta is] sitting be-tween Microsoft on one hand and "HP made as interesting case as to why someone should buy an

ilder on the other," Hur witz said. "Now they'll be con ing against Forte (Software, Inc. in Oakland, Celif.) and Dynasty [Technologies, Inc. in Naperville, velopment tools Gupta will ship Centura in

March, but support for partit ing won't come until sometime in the summer, the company said. But the partitioning capabilities aren't Centurn's key feature for all SQLWindows users. "For us, integration with the Internet is the ggest plus coming out of this,

said Jim Hutton, assistant be ness systems supervisor at Ontar-io Hydro, an electric utility in Pickering, Ontario, which plans to use Centura for providing infor-

tt-Packard Co. this week is

g its new entry-level Unix as World Wide Web nervwith prices designed to steal runt-related business from us Microsystems, Inc. The HP 9000 D class server, in-

duced last week as a depart-

**HP prices Unix** 

server to snare

Sun customers

## Java finally ready to pour

By Frank Haves

It took months to brew, but Java finally is ready, Sun Microsystems, Inc. said last week, Sun's JavaSoft division officially released its Java programming language for

Internet application developmen Java 1.0 can be downloaded in versi for Windows 95, Windows NT and Sun's Solaris version of Unix for free. A Macintosh version will be available by March from Sun, and IBM is porting the language

to Windows 3.1 and OS/2 The Java language was designed to create programs that can be downloaded and used on any computer that has a Java-enabled World Wide Web browser, such as Netscape Navigator 2.0 from Netscape ications Corp. or Sun's Hotlava.

#### Conturz percolates

Gupta Corp. last week said its new Cercura relapment system, the successor to SQLWindows, will not only let users create stices, but it also will adopt the lava bytecode as its internal coding system.

The official Java release - which develoners can download from http://igva. sun.com - includes a compiler, a viewer for running and testing Java programs, and class libraries for graphics, audio, anima-tion and networking. But this version won't look much different to developers who have been using recent beta versions of the software for months.

"We're up to our noses in one major application right now, and we're encouraging our developers to use Java for small projects internally," said Rick Brennen, many er of Web services at National Semiconduc-

tor Corp. in Santa Clara, Calif. onal Semiconductor's major app ion, which will let custo ly through 30,000 electronic component cts using a Web browser, has been neut for several mont

programming language that is si

w to get it: Free for d



ting giant R. R. Donnelley and Sc Co. in Chicago has created a prototype of a Java application that will allow customers to send material they want to have printed to

Donnelley. The company already has a Web site, but Java would give customers more

Java's a beautiful way to feed it," said Tom os, vice president of information technology at Donnelley's Caris division.

Other corporate infor-

shops are beginning to look at Java as well, but most aren't talking about it — at least not yet. "We're using Java, but we consider it a competitive advantage," said the infor-mation technology director at a major Midestern manufacturer who asked not to be entified. "We're not about to wave a flag so our competitors will know about it."

sees take It on the rfile. See

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## American's Sabrenet gets its wings

#### Airline's information technology unit to completely outsource data network

#### By Patrick Dreden FORT WORTH, TEXAS

ter building one of the world's largest data networks, the information technology division of American Airlines is ready to unoad the responsibility on some-

Sabre Computer Services au-nounced plans last week to compictely outsource Sabrenet, an X25 network that links some 22,500 sites in the U.S. Canada

A seven-year deal worth more than \$400 million will put control

of Sabrenet in the hands of SITA Group (Societe Internacionale de Telecommications Aeronautiques), a Paris-based data services provider whose 60,000-site network spans 220 countries. "We're in the same situation

now with data networks that we reached with voice networks. It makes economic sense for us to partner, not do it ourselves," said erry Jones, president of Sabre quiter Services, based here. The shift will saw an undisclosed amount related to upgrades for frame-relay links and

and managing increasingly open technologies, Jones said. Users typically save 10% to 20%

on operations and sfer risks by out sourcing some or all network control, according to Traci Bair, program manager for network integration and support services at ort services a

Corp. in Framing ham, Mass. The trend to turn "Our network is strategic, but we don't have to over networks to experts who can keep up with rising comnity by applying their own research

and development and staff makes sense. Bair said. However, 'Yew large organizations so far have ful-

ly outsourced their petworks." Most prefer to selectively outsource specific functions such as Remote Monitoring to maintain a high degree of control OWNER & PRESSURE AN strategic as a network, according to

\*Our network is strategic, but we don't have to own it," Jones said. No one offered the ex-

Alex Niehaus, man

ager of marketing for communica-

tions products at

"Notes is now

that collects, stores

and maintains co-

Lotus.

terprise data," said Alan Baren,

manager of strategic technology

at Coopers & Lybrand in New York. Lotus must address this on

To make sure users have the

most ap-to-date Notes data, Notes

will support clustering of up to six Windows NT-based Notes serv-

ers, which will provide automatis

switchover if one server in down

Chastering support will be a part of the Lotus Notes Public Nes-work, software that will ship in

an enterprise level, he said.

corrate an X.25 network of such scope five years ago, when the Sabrenet expansion and stands ization project began, he said. But now SITA and the large carriers are up to the task SITA will boost Sabrenet band-

width for airports and travel agencies through its frame-relay connections and extend its reach throughout North America, according to officials of both

Scitor, the commercial services arm of SITA Group; provides net-work services worldwide to corporations, including airlines, hotel chains and financial instit

Ell Lilly relies on Remote Mon itoring. See page 69. pertise required to

## Adding applets to Notes may undercut SmartSuite

the ongoing cost of engineering

Lotus says component object family will hit Office suite harder

selling tools that improve the idea of using software con ORLÁNDO FLA Notes/Office integration. Fiece by piece, Lotus Devel

opment Corp. is blending into Notes some of the features normally found in PC software suites. At its Lotusphere '96 conference here last week, the company unveiled a set of component ob jects — including a minispread-sheet — that can be inserted into Notes documents. The IBM subsidiary also integrated the calening feature from its Organi vare into Notes 4.0 to permi group scheduling.

Officials at Cambridge, Ma based Lotus acknowledged that the Notes-embedded software components may carmibal some SmartSuite sales. But the good that Microsoft Corp.'s

ce will take the They claim Notes and SmartSuite are much more integrat-ed, providing data cess and convernion features berees the two; integrating Office with Notes would be re cumberno

The Notes software comos ats, which will offer a subset of features found in desktop suites, could give users more reasons to forego the large and often-unwieldy suites.

"Often users take advantage of only 10% of the functionality of a word processor," so minidications may be sufficient. said Gerry Murray, an analyst at ternational Data Corp. in Fragham, Mass, "And 90% of the shortivity of a document is when it actually leaves the deak top," where users collaborate and use the document as part of a

siness process with Notes. The components are OLE cusrols written as extentom contr sions to Notes. They can be placed on other OLE-compatible ap-

plications, although components won't be able to take advantage of the built-in Notes inte ation features. The calendaring and scheduling features of Organ will be stored in a user's Notes mail data-

base and show up as a calendar folder.

tems managers like

from day one," said David Mar-shak, so analyst at Patricia Sey-bold Group in Boston. environment. "We will certainly look at cor nents," said James Wil-We have been a little beaten coxon, vice president of up by enterprise custom-ers" in the transaction Paddock Swimming Pool Co. in Rockville, area, acknowledged Md. The company has already created

own it."

Notes

a large Notes appli cation that launch-SepartSuite spreadsheet and word processing documents. He said wouldn't be suit

nents to help users stay with

one familiar user interface

able for large spreadsheet files.

Many customers would like to see Lotus focus its component plans on other platforms, such as Unix, OS/2 and the Macintosh, Because they are based on Microsoft's OLE, the components will work only with Windows 95 and ws NT operating systems. "The [Notes] components are used on the wrong platform -OLE," said Stowe Boyd, principal

at Work Media, a Herndon, Va., tancy, in his view, Lotus eventually will have to scrap OLE based components in favor of other technologies, such as the multiplatform Java development

February and that helps run pub-lic Notes networks such as AT&T's Network Notes. No delivery dates were pro-vided for adding clustering to cor-porate versions of Notes, but de-

Brian Bell, director of technology at Lotus' interenterprise comnications group.

CONTINUED FROM PAGE 1 The high availability of clustering Notes servers will also to users and a player in mission make life easier for large corcritical processes. This is espe-cially important for Notes sites porate Notes networks. 'If you lost a server for 100 per that want to make the package ple, it would be a problem," said more of a strategic investment in John Schulz, project manager at US West Management Information Systems, Inc. in Englewood, Cole., which has about 5,700 This should have been done Notes users. But with Notes 4.0's.

proved scalability, the possibility looms that a server for 1,000 users could be lost. Clustering could also cut buch on the high costs of runnin Notes 3.x installations and the many servers they require, Scholz said. He estimates that Notes support costs about \$200 per user at US West, But with lowreally becoming a strategic platform

er Notes pricing and the ability to scale more users on one server and employ two clustered serv-ers, Schulz estimated the cost could drop by almost half - to about \$120 per user. The improvement of the

MQSeries middleware link for Notes should prove important for interesterprise applications because it provides a way for Notes dications to com rectly with back-end transa-systems such as IBM's CICS. MQSeries Link has been im proved to include bidirections support for moving Notes data to

a transactional system and mov-ing transaction results to Notes. It will ship by the middle of the year. IBM plans to integrate MQSer ies with NotesView administra tion software, said Steve Crass senior manager for MQSeries The firm provided no time frame

PUTERWORLD (http://www.computerworld.com) January 29, 1996



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Your people are screaming for better information. Your boss is hammering you on costs.

What computer system

The administration of the desired particle processing and the second sec

If the husiness decisions are yours, the computer system should be ours.



Computer Systems

## Client/server apps make leap to Web browsers

QuickServer leverages traditional application development on the Internet By Mitch Wagner run them inside Netscape's Navigator or bility of a TCP/IP network. Users can write

Microsoff's Explorer browsers on the Waytarry Communications Corp. today will World Wide Web. unveil software this lets users write their QuickServer combines the functionality own custom client/server applications and of client/server technology with the flexi-

applications in C++, Microsoft Corp.'s Visual Basic, Sun Microsystems, Inc.'s Java or Powersoft Corp.'s PowerBuilder. Communies will be able to use Quick-

Server to deploy applications to sales people in the field and to suppliers, contractors and other business partners. QuickServer can also be used to build custom applications for consumers and to create internal company

front ends for on-line services that run on the For instance, PC Quote, Inc. uses Quick-

Server to develop an no-line service that offers stock quotes live on the Internet. It uses a graphic that simulates a stock ticker crawl on the bottom of the

Luke Crofoot, marketing services suprisor at 3M Co. in St. Paul, Minn., said QuickServer could fill a significant need for

"We're looking for software that links to our back-end legacy databases, providing an easy-to-understand front-end tool (such as] a browser," he said. "That will be very attractive to different areas of the

The Wayfarer technology lets an information systems staff use its traditional appication development skills on the Internet, said Nate Zelnick, an analyst at Jupiter ications, Inc. in New York. "All of a sudden, you've got this cheap worldwide network to run your [applications] on," he

Indeed, the plan is to take client/server technology "out of the company headquar-ters and large regional offices and [put it] onto the Internet," said Edward E. Colby, chairman and CEO of Wayfarer in Moun tain View, Calif.

Speeding it up The software runs several times faster than Web applications because it doesn't actually run on the Web, Colby explained. Rather than use the standard Web proto cols and languages throughout a session — Hypertext Transport Protocol (HTTP) and Hypertext Markup Language — the user instead contacts a QuickServer server that s HTTP. The client software then inches a session using a proprietary pro-

tocol that runs on the internet. The client software runs inside a window of Netscape Communicati

Corp.'s or Microsoft's browsers, using their "plug-in" technology for third-party

QuickServer is available immediately and costs \$499 for a developer's kit. The runtime server costs \$5,000 and includes 10 runtime clients. Each additional client costs \$100. The client software runs on Windows 95 and Windows NT. Windows 3.1, Macintosh and Unix versions are due in the second quarter.

A Canadian government as onto the Web. See page 72.



## We're not interested in taking PowerBuilder's customers.

## We want developers with larger ambitions.

O.K. For banging together a quick application erBuilder and other 4GL development tools are fine

The problem comes in using them to create large-scale, mission-critical circut/ server solutions. They samply can't do at in fairness they were never meant to

VMARK's Object Studio" is the only object-oriented (OO) client/server development environment available today. with integrated modeling and development capabilities, resulting in better designed

applications that more accurately reflect the realities of your business Object Stada promotes application

architectures based upon modular, reniness objects. Using drag-and-drop facilities, you can create a business model before you write a single line of custom code. And your model becomes a core part of documen-

allows you to scale up or assemble new applications by reusing existing, pre-tested components, which can also be reused individually or in a team

tation and re-use efforts. further enhancing productivity is

And when it comes to accessing

data. Object Studio has apparalleled capubilities, it combines high productivity tools with some of the broadest host and database connectivity in the industry

Object Studio provides visual, dragand-drop mapping of objects in the business model to tables in a relational database, in addition to insoluting your business model from changes in the database. Constructing applications with

modular objects means that changes and modifications can be easily made without affecting other parts of the application, significantly reducing maintenance roots

Object Studio supports Microsoft's DLET\* making in compatible with Microsoft's Windows 95", Windows 3.1" and

Windows NT: And Object Studio's clear simple syntax and English-like commands make it the easiest 00 language

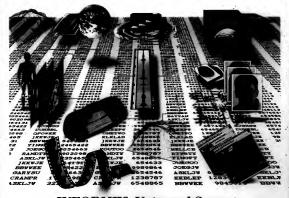
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### Users push for Internet document access

custest management vendors have en quick to point out the importance of the World Wide Web And they are in sync with users, who say it is important to have access to their docu-

By Suruchi Moham

Picking up on that cry, Interleaf, Inc. in Waltham, Mass., last week unveiled fatel lecte/Business Web, which provides easy access to documents via a Web browser. And Documentum, Inc. in Pleasanton Calif. last week announced Accelera.

mentum's document repository with a Web browser "Companies are acting on user demand," said John Borger, software support analyst at Allen-Bradley Co., a factory automation products company in Milwaukee. Borger

uses Interleaf's document management

they didn't have a product that could access documents via the Web."

Tve seen an increasing number of companies going to document management (options) or building large repositories," said David Yockelson, vice presi dent of Meta Group, Inc. in Stamford, Conn. For companies doing more lwith internal networks], there is the realization that the Web server is the least common denominator for document management,"

Frank Gilbane, di Document rector of CAP Ventures, a consulting

company in Marsh field, Mass., said the need for these systems is twofold: "If you have a document repository with document management. the ides of using a Web browser to access information is very appealing," he said. You can devise ways to give information

very casily Second, a large number of companies are building Web pages. These documents are complex because they contain links and are one to frequent changes.



Cost certainly is another factor. Buying a complete document management system was expensive but buying the browser wasn't, said Michael Howard, senior software engineer at Storage Technology Corn in Louisville, Colo.

Howard said he invested \$1 million in a document management system but spent less than \$50,000 on the Web piece. Moreover, the low cost of Web technology allows a company to give more users access to

Jim Bair, research director at Gartses Group, Inc. in Santa Clara, Calif., agreed. The Internet is beginning to look like an effective, least-cost option for network architectures," he said. "Internet technol-ogy via the Web is absolutely first class bese it gives a systematic way of linking to gether any file anywhere on the network





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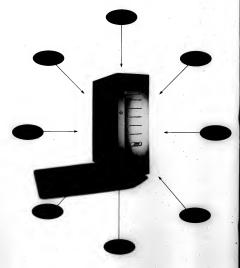
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### TIONS are BUILT by TEAMS of COMPANIES.

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Well, that takes several companies. Companies like Microsoft, with whom we created the ideal platform for Windows NT and Back-Olfici, integrating hardware, software, and server management. Novell, with whom we've created networking standards for years. Oracle, whose databases are fareasier to deploy on a Companies over thanks to our partnerships. And SAP, a leader in client/server applications, who's named us Partner of the Year.

You see, they may be Compaq servers. But they are Compaq-Microsoft-Oracle-SAP-Intel-Novell-SCO-Sybase-Cheyenne solutions. (We just couldn't fit all those logos on them.)



Has It Changed Your Life Yet?

## A switch in time

Analysts' sober predictions are expected to deflate ATM hype | ODS offers up a wide variety of low-cost,

#### By Neal Weinberg

ATM bigots may find this week's ComNet '96 a bit bracing. That's because industry analysts are excted to throw cold water on the s,overheating ATM hype.

jections show sluggish growth for Asynchronous Transfer Mode (ATM) in the wide-area network market in 1996. And from the ng-range picture they paint. I'ld might as well stand for After

"The market has not taken off as quickly as some people expected," said Rosemary Cochran, an analyst at Vertical Systems Group, Inc. in Dedham, Mass.

At the end of last year, Vertical ed only 72 U.S. customers ATM, and the vast majority of mingham, Mass., will tell a similar

ically large data requirements. Cochran said since 75% of frame-relay data traffic moves at only 56K bit/sec., market demand for a technology that moves voice. data and video at 45M bit/sec.

#### simply isn't there among mainstream commercial organizations Frame relay on top

Vertical predicts that ATM reve our in the U.S. from both equip ment and services will slowh ramp up, from \$111 million last year to \$246 million this year and to \$707 million by 1998. But ATM revenue pales before frame relay, which racked up \$1 billion in reve-

nuc hot year. Caroline Rob at International Data Corp. in Fra-

story during her ComNet brief ing. She predicts 'no dramatic growth" for ATM this year. Robertson said ATM will have "niche appeal" for users looking to integrate data and video into one network or users with beavy data requirements. Michael Smith, an analyst at

Datapro Information Services Group, Inc. in Delran, N.J., said he doesn't expect to see widespread adoption of ATM until "1999 at COM

the earliest." The reality is that frame relay is a much better choice for most businesses," Shifth said.

The recent availability of low-

peed ATM and frame-relation ATM interworking may give ATM 'a little jump start," said Beth Gage, an analyst at Tele-Choice, Inc. in Verona, N.J. But Gage said the vast majority of user needs will be met by frame relay and Integrated Services Digital Network (ISDN). 'Frame is al-

ways going to be a better fit for data applications," Gage said. And ISDN in a relatively inexpensive videoconferencing approach. Cochran added that ATM adoption has been slowed by a number of factors, including the lack of industry standards and limitations

But the prime reason ATM hasn't taken off is that most users ily don't need the bandwidth ATM provides, Gage said.

seven chips - including as Inte

Corp. Pentium processor, a full

Peripheral Component Intercon

nect chip set and 256K bytes of 1.2

cache - into one module.

high-density modules for high-end hubs By Bob Wallace

Optical Data Systems, Inc. (ODS) is expected to announce at Com-Net this week a wide array of LAN switching modules for its Infinity hub. These will give users an alternative to 3Com, Cabletron and

Cisco for high-end switching Imphe LAN switching in high-end habs lets network eranagers break up bandwidth bottle-

necks in backbone networks and lets managers give individual un-ers their own dedicated capacity. The ODS Warrior modules of-fer low-cost, high-density Ethernet, Token Ring, Fiber Distribut-ed Data Interface (FDDI) and Asynchronous Transfer Mode (ATM) modules for the firm's high-end, 12-slot Infinity switch ing hub

With the delay is shi Bay Networks, Inc.'s System 5000 LAN switching wares [CW, Dec. 18], analysts and users said ODS could strengthen its competit position against heavyweights 3Com Corp., Cabletron Systems, Inc. and Cisco Systems, Inc. "ODS products are high quali

and stack up well (in price and performance] against the hig boys," said Blair Sanders, a senior member of the technical staff at Texas Instruments, Inc. in Dallas. "ODS has got integrating differ-ent switching technologies is a single form factor and under a common management (scheme) down to a science."

solution, but it seems to work."

Geoworks and Ericeson, Inc. of

ficials said they have reached as

recinent to develop a "smart

Charlie Robbins, president of

Aberdeen Group, Inc., a consultancy in Boston, said. "The Infinity stacks up very well sguinst a [3Com] LANplex 6000 or a Cabletron MMAC-Plus. ODS has done an excellent job integrating differ ent (LAN) switching technologies in the Infinity. According to ODS pricing

users will pay about \$870 per switched Ethernet port, \$2,160 per switched Token Ring port, \$2,000 per switched FDDI port and \$8,000 per ATM port, In an effort to drive the high-speed switching technology to the desktop, ODS offers for \$7,200, or \$600 per port, a 12-port ATM module that supports switched 25M hit/sec con Some of ODS modules don't have as many ports as models from Cabletron. But unlike Cable-

tron and Cisco, ODS is shipping Token löng and ATM switch in its high-end switching hubs. "ODS is a different breed of at," Robbins said. "Where other vendors such as Cabletron develop their switching technology internally, ODS has pulled together technology from many outside sources and in therefore a master

Sanders agreed. "ODS does this quickly, whereas Cisco and Bay [with Centillion] seem to take longer to to integrate |outside| products into their architecture and management system."

Other Comitet previous. See page 57.

## Electronic organizer in store

Palm Computing wants to put its device in the world's hands By Mindy Biodgett took on Communications and Computing" in Boulder Creek, formance to notebooks by putt

is the world clamoring for an elec-

The Palm Computing division of U.S. Robotics, Inc. in Los Altos, of U.S. Robotics, Inc. in Los Altos, Call., thinks to, Palm Computing this week will announce Pilot, a line of handheld electronic orga-nizers designed to connect to desktop or laptop computers. The ony plans to ship the units in

ed at 8299, Pilot auto By sylichronizes its information th a PC or PC LAN, comes with are and russ on the Palm op-

Calif., called the device "interest ing," but he questioned whether there is a large market for an electronic organizer such as Pllot. "It's cute; it's essentially a pock-et Day-Timer," Seybold said. "But it has no space for a PC card at all, no province for any keyboard. I don't know if that in the direction organizers should be going in."

Mobile announcements stated for this week include the follow

• MicroModule Systems, Inc. in Cupertino, Calif., today will announce Spectrum CPU Modules - the first multichip module for notebooks. The module was deditor of the newsletter "Out-signed to help bring deaktop per-

The module supports multi CPU clock rates, chip sets and cache configurations without leading to chassis redesign, there-by shortening the time to market, npany representatives said. By using aluminum instead of traditional substances such as plastic, the module should be about 10 de-grees cooler than traditional into-

grated circuits. That is important bec book designers have had difficultr taking the faster chips now used in PCs and putting them in

Optical limit Systems plans to obly the following trial sulfa- mentures for its high-and tellenty holes.				
B46	Street of a	an Maria		
Switched Ethernet	8	\$7,000		
Substant State May	16	\$13,000		
Switched FDDI	8	\$16,000		
ATE	*	24.00		

ptops, since the higher heat phone" - a device combining celuses a breakdown. They are much closer to a soular telephones with data trans-nission capabilities. tion [to] the heat problem in Ericason will use Geoworks notebooks," said Martin Reyn-olds, an analyst at Detaquest, Inc. in San Jose, Calif. "It's an offbeat

Geos operating system.

The smart phone market is expected to heat up this year. Geo works has already started work-ing with Nokis on a smart phone, and Sony Corp. is developing one

PUTERWORLD (http://www.computerworld.com) JANUARY 29, 1996

Is there ever a

# tó ungrade your operating system

The control of the co

The reset of the property of t

#### Support for IS.

Today, you can turn the

desktop into the most

tangible technology

company can make.

Support for system administrators begins with support for end users. With its simplified interface, Windows 95 allows users to work far more independently than in the past. Simply put, the greater their autonomy, the less time you spend answering obvious questions.

But it's not just the interface that's improved; the whole system is more reliable. Thanks to the 32-bit protect-mode components of Windows 95, users can run

multiple applications at the same time, without running out of system resources or freezing-up their PCs. The same is true even if a network server goes down. And, with 32-bit applications now able to run in their own memory space, the likelihood of one app crashing another is almost nil.

What's the upshot of all this? Well, it won't exactly turn you into the Maytag repairman, but it can cut helpdesk calls by 7 to 14% a year.

Still, in designing a new OS, we realized that to make things easy for the end-user at the expense of the IS department would be self-defeating. And to that end, Windows 95 offers a variety of powerful tools to help you better manage your network and your time.

Built into Windows 95 are a number of tools to simplify administration. 32-bit versions of popular network clients.

like Novell' NetWare" are included, as is support for standard transport protocols like TCP/IP and device standards. Plug and Play support detects hardware devices as they are added to the system, which makes instalation as map, And, with Serve-based Setup and Batch Setup tools, it's now possible to instala and configure Windows 950 multiple desktops from server. Automaticale, Once you're wired, you can monitor performance and troubleshoot problems from a central location.

#### More support: more control.

System Policies in Windows 95

allow you to specify system settings and restrict network access and security privileges from a central location. So you can lock down desktop configurations whenever you see fit. And with User Profiles, individual users' desktop configurations are available wherever they log on to the network. This lets multiple users share one computer and "roving" users log on to other networked computers, while maintaining their own personal setting.

Again, with Windows 95, all of this can be done from a central location, reducing the number of on-site visits by 30 to 50%. At last, you'll be able to focus on the big-picture stuff. So the next time someone asks you what's what with this intermet thing, you can say, I have a plan.

#### Productivity from the word Start.

The improved interface in Windows 95 makes nearly everything assier for novice and advanced users alike. Its Start button and task bar make applications more accessible. Long filenames make identifying files assier. Better tools and improved Help make learning features

filterature make identifying filter assists: Better pots such as Waterd sonl improved Help make learning features easy. Its right mouses button puts common commends a circle wave, And most that the separates Pargram Manager, File Manager and Print Manager are goint, there are fewer concepts to learn. This makes for elds, a victoriomous, and, dare we say, happy end users. People who require test training and support. Who, in abort, can trust the dealstop and to the most tangible technology investment your company can make.

But Windows 95 isn't just easier, it's more responsive. Basic operations, like printing or accessing a file on a PC or over a network, are faster, and with its 32-bit multitasking capability, users can conduct file searches, ordine communications, or other tasks all while, \$ay, oditing a document. In fact, studies show that once users are familiar with the new OS, they're able to accomplish many tasks in show half be time it took unter Windows. 31 or any tasks in show half be time it took unter Windows. 31 or the property of the studies of the st

Of course, no one spends their entire day tooling around in their operating system. People have work to do. With that

Il mondicine (Institution) In the control of the co

The prevailing wisdom and why, this time, you should ignore it. Common sense tells you to hold off on making the move to Windows 95, to wait until some cloc finds the bugs. Well, someone else already has. With the largest bets program in history, Windows 95 was installed on more than a million desktops worldwide. Now, just six minut into its commercial release, thousands of organizations are in pilot and rollout. And so keep them current, we've put together an online Service Pack with the latest drivers and other new components. In short, the dreaded "1.0 version" has already come and gone.

in mind, no evaluation of Windows 95 would be complete without simultaneously evaluating some of the 32-bit applications designed for it, such as Microsoft Office for Windows 95.

Now users can focus on their work instead of their software.

Office 95 is more than just fresh features on top of Office 4.x, It's a deeply integrated suite of applications, -Integrated, both with the operating system and with each other. Because users can leverage their knowledge of one application throughout the antira suita, they need only three hours of training to be effective in all of them." Needless to say, this can dramatically reduce training costs.

But what about support? While it's one thing to get PC users up and running, it's quita another to teach them all the skills they'll ever need. And of course, you can't; users simply aren't interested, (Remember? They've got work to do.) Knowing this has made all the difference in designing Office 95. It's resulted in advances such as the Answer Wizard, which lets users ask the computer plain English questions like, How do I print sideways?, and then shows them exactly how to do it. As a result, you can expect a 48% reduction in Office-related belo calls.5

With Office 95, users are not only able to work on their own, they're able to accomplish more things faster. Labor-saving features such as updated AutoFormat and Spell-It in Word, and enhanced AutoComplete in Microsoft \* Excel, not only render everyday tasks automatically, they

do so accurately. According to Kelly Services, the folks who train and supply corporations with over 325,000 temps each year, users complete their tasks 37% faster with Office 95. And they're 36% more accurate in doing so." Not a bad day at the office.

Why sooner is better than later.

If, as the headline says, there's never a good time to migrata, why make the move now? Why? Because deployment takes time. Product reviews, network

configurations, lab tests, pilot programs, rollout - it takes time. And if the goal is to decide is it worth it? and you continue to put off serious evaluation, it'll be that much longer before you begin to realize the productivity gains and cost savings that Windows 95 and Office 95 have to offer.

But let's assume you upgraded today. How long would it take to recoup your migration costs? According to a leading consulting firm, Office 95 will pay for itself in 10 months in medium-sized companies, and 12 months in large organizations." Factor in the increase in end usar productivity, and those numbers fall by

nearly half. No question about it, the move to 32-bits is a big one. But as part of the larger evolution in chin architecture, hardwara platforms, and application support, it's not one that you or Microsoft is making

alone. Won't you join us? How to start.

. To receive a free copy of Trial 95 - including guides for evaluation and an upgrade to Windows 95 and ng out for Windows NT's Workstation, don't. Each has its own role within the corporation In fact, the two are com as many businesses require both to fulfill their far-runging need he it equipping their sales force with laptops or running comensive programs on their n

Windows NT? Yes. If you've thought about by

Windows 95 or

ocessor systems. deployment, resource kits, feature reviews, and, of course, copies of both Windows 95 and Office for Windows 95, each with a 90 day license - call (800) 583-0042, Dept. A017. Or visit our Web site at www.microsoft.com. All the backup



for the studies cited here is included, along with an ROI

rours of self-discovery were required to migrate Office 4.3 users to Office 95. S. WorkGroup Technologies, Inc. B. Helly Services, Inc. conducted a controlled usability study of 35 err regularly use Office 4.3. Participants were measured for speed and accuracy in correlating commonly performed tasks. 7. International Data Corporation ms of Office 95 for large companies (1.0)80+ PCs) and for small to medium companies (100 PCs). On a cost to use basis, large companies will see their investment. ent poid for in 12 months, send op substantially: 4.8 months for large compenies, 5.3 months for small. © 1996 Microsoft Corporation. All rights reserved. Microsoft and Williams (Co. and Miners do you seem to an incider? are trademarks of Nicrosoft. Novell and Netfliers are registered trademarks of Nicrosoft.

## Computer Industry

## **Industry** seeks end to crypto export controls

By Gary H. Anther

A confition of influential comput-er companies has called on the ernment to relax controls on

This is hardly new Industry has beseeched the government repeatedly during the past several cars to lighten up on export conols for cryptography, with mini-

But in this latest call for relief. the Washington-based Computer Systems Policy Project (CSPP) is

The CSPP, which comprises CEOs from 13 major computer companies, argues in its latest re-port that software and data are reproperty." And, just as with agible property, users should we the right to saleguard cyber-

Therefore, the government strong cryptographic products out restrictions

noestrate a risk, the CSPP said in its es on Security in Information

Age" (see story at If you walk up to a member of Con-What's encryption? they'll either say, 1 don't know," or, "Isn't that the Clipper chip?" said Ken

changes that reflect mate use of security and address the govern

should be, which is a persona property rights issue "As the number of linked netought to permit the export of works increases, individual and business owners will require ef-

fective encryption to safeguard their cyberproperty from vandals, thieves, industrial spies and Scott G. McNesly, CEO of Sun Microsystems, Inc. and cochairman of the CSPP's working

group on security. encryption and export controls. "Indeed, govern ment and industry should be working together to protect

crow agent and use it to deco government, indusan encrypted file or message. Industry has complained bitter try and individuals ly about the restrictions, saying

Tall order for Uncle San

bilities rather than struggl over the fatile endeavor to coss encryption,\* McNealy added. low the export of strong crypton raphy — techniques that use en-cryption keys longer than 40 bits — unless it includes a "key escrow" feature. That would allow der, to retrieve the key from an es-

overseas. Industry also says the restrictions hurt the sales of U.S. ryption products and are pointless because strong encryp-tion is available from foreign

to tangible property might appea to government officials who deal in export control issues. For pur poses of export regulation, cryp tographic products are treated as "munitions," subject to the same

## Yin and yang of Mac clone makers

tor of the CSPP. But

Macintosh clones from start-up. Power Computing Copp, are nell-ing like gaughtesters, but rival Ra-dius, loc., another high-purifi-Macintosh computities maker, appears to be going bust. Both companies signed world-wide Mac OS Bounes with Apple Computer, Inc., but each has tar-geted a different seament of u-perior a different seament of u-

ed a different segment of us-with a slight overlap on mid-ge machines. Radius' high-end cintosh clones are aimed pried on delivering low-cost,

hen divergent paths. In the past year, Radius has seed a myriad of well-publicised nancial problems that stem from s transition from a graphics sourd and monitor maker to a sys-rus vendor. Its wors may have carrel off some potential users. The Radian machines in

been going down and down in price, but frauldy, it started to look like a fire sale, so we didn't loop them," said John Papa, a purt-

services group in New York that has more than 100 Apple-built Macintoshes, Teading has a protect tough history, and that makes us a little leery about buying from On the flip side, Papa said his

company would have no problems hasing Macintosh-type systems from Power Computing which is selling a range of low-end and general-purpose clones.

"Power Computing looks like they are for real," Papa said. "The prices are good. The systems are

compatible. They get good re ws. There seems to be a level of stability at the company. So I think we'll be comfortable bringing in a couple machines and giving them a test-drive."

oped its first PowerPC Power Macintosh systems in August, said it is on track to sell about 56,000 muchines in its first 12 months of business. That figure rivals units sold by Compaq Com-Corp. in its first year. To further beef up bus

beyond its mail-order-only business into retail. And the Round Rock, Texas, company also is ting its offerings. At Macworld Expo earlier this month, is aveiled a new line - Power-Curve Power Macintosh syst

More proof of how well Power Computing is doing is a deal it recently signed with software giant Microsoft Corp., whereby Office for Macintosh will be bundle with selected models in Power Computing's PowerWave and

This is the first time Micro has bundled its best-selling Office for Macintosh suite. But Radius inn't giving up on

the Macintosh clone market. Earlier this mosth, financial presures forced the Sunnyvale, Calif., company to merge its Macint me business with Umax Data Systems, Inc., a Taipei, Taiwn sed computer maker that holds a license to sell the Mac OS in

Radius and Umax have form a separate company, called Umax Computer Corp., that will sell th clones in the U.S.

#### On-line forerunner GEnie sold after falling behind nack

Dy Mitch Wagner

GEnie, the tattered grande dame of on-line services, has been sold. General Electric Co. said it expects this week to close a deal to turn the service over to Yovelle naissance Corp. in New York. Yovelle, a group of private investors, will conti

interruption. It plans to the World Wide Web, said Doug Wolford, a spokesman for General Electric Information Ser-

vices, Inc. in Rockville, Md., the erial Execution Network for Informa-tion Exchange (GEnie). The ser-vice'n sig competitors, including America Online, CompuServe, Prodigy and The Microsoft Net-work (MSNO, have rande similar

GEnie once was a leader in the on-line services industry. Founded in 1985, it vied with CompaServe in popularity. But GEnic was beset by lousy marketing, little to no advertising and a failure to come out with a reli-

on trying to win recreational connumer users, using the existing, loyal customer base as a core. In the short term, the service hopes to win back users who left during its decline. At its peak in 1994 it had an estimated 400,000 users; now, it has just 55,000, said Fred Sugarange, a

able front end for Windo

In the future, GEnie will focu

son, CompaServe has an estimated 4 million users, and the MSN has accumulated an estim 600,000 users since it started in

August.
Other than that, Sugarman was reticent about future plans. He wouldn't comment on who the new owners are or their previous business record or financing.

GEnic staff expressed hope that Yovelle could return GEnic to its glory days. "I am relieved that

the waiting is over, and I am anti-loss to see what these people want to do," said Nic Grabies, a largest services on GEnie, the Sci-

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peritive global marketplace. These four hard hitting, provocative panel sessions of high-impact interaction, will focus on practical applications of emerging

### oing Business on

Panel Modernor: Gay Sleinger Vice President Gira Information Group

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Year flow him mover have as Year seed to stay on top of he teday's world, you must he a

> Pand Moderator: Alan Alper Beliner

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Norm Reline Compountmental Learn how cop CICs found and notived challenges such as tracking PC introduces and notivenee, capacity planning.

as tracking PC haldware and software, capacity planning disaster management, roll back and moneys, systems tuning and more. Descrime how leading

Solution Late

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# Apple needs Sun

In journalism, there's a thing called an "evergreen" headline. It's a headline you write and then file away. knowing you'll very likely use it

again someday.

Nine years ago, we wrote just such a headline. It read. Apple to Jure MIS, tie Macs to CPUs," For all I know. that wasn't the first time we wrote that headline. I am certain it wasn't the last

The innovative marvel that was Apple spent much of the past decade trying to break out of the corner into which it had painted itself. That corner was populated by home users, schools and maniacal Macintosh devotees. I was a Macintosh user (desktop and haptop) for eral years — several yery

factory years. Eventually my company

dopted a Wintel strategy that dined Macintonh use to the Those users would quit if we tried to separate them from their Macintoshes

By the time you read this Apple may have agreed to be aght by Sun; at least that was the conventional wis

m at press time. If it is true, we may finally be able to write that "evergreen" headline about Macintoshes being bons fide corporate citizens for the last time. Forget about why Apple's management failed. Yes, if John Sculley or Steve Jobs had licensed their elegant

Macintosh technology 10 years ago, the world would be different today. But people do what they do when they do it with the information they have, period. Fail ing to license the Macintosh stifled innovations that a gger legion of third-party developers would have ucht to the Macintosh world

Sun is a corporate citizen, and a good one. It is sitting on a keg of dynamite called Java, its white-hot Internet ming language that promises to enable applias written once to run on any machine. Like a Wintel box. Or a Unix box. Or ... a Macintosh.

With 15 million or so Macintosh maniacs out there, what better way to get Java off to a flying start than to we your own instant installed bone to work with? And what better way to egg on the always reticent thirdparty developers than to present them with such an inalled have for Java-enabled applications

When you consider the alternatives, a Sun buyout is the best thing both for Apple and for Macintosh users. Such a move also would turn up the heat on Microsoft. The customer is the inevitable beneficiary of the innovation born of competition.



Internet hill\_laboris@cu.com



### Hail the help desk

Jeremy Schlosberg's article [\*Not much help," CW. Dec. 181 does an excellent job portraying how low the help desk falls on the corporate totem pole. However, this does little to diminish its importance to the infra structure of any information systems

For example, a Gartner Grou lac. study found that over the life-

time of a PC, the initial purchase is only 15% of the actual cost of ownership. The other 85% is spent on support and administration. Whether this 85% lifetime cost is spent effectively depends largely on how well the help desk integrates into the IS Effective help desks spot end us-

ers who need training and miscritical equipment that is unreliable. They also provide a central point of act for the IS com

With corporations relying more and more on IS technologies, the help desk will surely become an inable tool in protecting the inrestment that corporations make in ose same IS technologies. The help desk is a corporate entity whose time has come.

#### Making money

Maybe I missed the point regarding the expense, bandwidth and such of marketing on the Internet ("The net cheap? Think again ... " CW. Dec. 18i, it seems to me that the big shops with deep pockets are spend-ing far more than they should. My first year's expense will be under

\$2,000 including [payments to the] access provider, home page development and directory fees. I recovered that much in less than four months. Most buyers that use the World Wide Web are small companies or individuals (that have) low-speed ections. They aren't impressed with the delay in receiving huge graphical images and go elsewhere

hey want steak, not sizzle Graphics are wonderful for the ect that has to be seen to be old. They are even better for the consultant that you pay to create them, the marketing department with an ego [that needs] to outdo the competition and people who think the marketplace really cares what

your headquarters looks like. Too many home pages are bar on what some consultant said to do to be successful. Let common sense prevail, and your market will tell you

> Rich Mod dambia, Md.

Different paradigms Craig Dudley's letter stating that SNA, and all proprietary protocols, will always outperform public-domain protocols" ["SNA perfor-mance always better," CW, Dec. 18] says more about-mistrust of open systems than network performance.

The difference between a properary protocol and what Dudley inscurately labels a "public-domai protocol is slight; one is controlled by a vendor, the other isn't. My ex rience with TCP/IP (a nonpro etary protocol) and IPX/SPX (a proprietary protocol) has shown that TCP/IP is far more scalable, effcient and reliable for LAN and WAN

Dudley says that SNA over TCP/IP will always be worse than straight SNA because of the longer header on IP packets. But experi ence has shown that once the line speed gets much above 64K bit/sec.

increasing packet header size has negligible effect on throughput. Dudley is right that SNA over IP can't work as well as raw SNA, but the two were designed around comligms. Both were designed for the "speed and fast response times" that Dudley attributes to SNA, I'll bet

TCP/IP over SNA doesn't work very

Did Gates say that

orld welcomes co from its readers. Letters should no to Bill Laberis, Editor, Compa P.O. Box 9171, 500 Old Connecticut Path righers, Mass. 01701. Fax run (coli) 875-B035; Internet; letteral

ality Howard Stern "What's that?" you ask. "I'm not a male adolescent disguised as a forty-something transvestite

Too true, and we all thank you for that. But onetheless, Stern wants Integrated Services Digital-Network (ISDN) and can't get it. In all The king of risque radio complained on his

show that because he can't get ISDN, he can't work (naked) from home, be can't get fast access to (triple X) on-line services, and his (lurid) Email connections are too slow.

Those are, roughly speaking, the same reas most businesses want ISDN. Granted, Stern confessed that it was good for his marriage that be couldn't get ISDN. He really

wants it so he can download prurient pictures of postpubercent preeners. But Long Island is the 11th-largest commercial market in the country, so why can't he get ISDN?

You folks in IS know what he means. Too many of you have called telephone company represen-tatives who still can't spell ISDN, much less sell it to you. Even if you do have ISDN, getting it probably drove you to wish it were still politically correct to drink heavily.

ed to move quickly. But it's still mired in meetings You're not even famous. But Stern is, and be's probably rich, too. So why is it that in the 11th largest market in the country, the escape hatch

Howard Stern can't

get ISDN? Howard meet Maribel Lopez oward. Lopez Howard casts a stern eye on the ISDN market as an analyst at leternational Data Corp.

She pointed out that because Long Island reason to let Howard Stern, or anyone else on the island, have ISDN



your hair is."

ng ISDN, and US est want to charge ee for the service. The FCC's move to

rvise its ISDN regula tions so far he nies to accelerate the pace of their ISDN in

stallations, either, Mar sceme to be saving. Not in this lifetime, bub, no matter how good

But I have a thou I propose that FCC Chairman Reed Hundt name Howard Stern the ISDN poster boy for 1996 in exchange for dropping, say, a couple mil-lion bucks in fines against him.

Maybe the phone companies will be eml used into action by a man with a vocabulary in the sewer and the legs of a third-string water boy. daybe then there will be ISDN for all. Whaddaya say, Reed?

wn. Now, in fact, Pacific Bell, arguably the

John Gantz

is significantly higher."

# Is your Web site worth the effort?

controlled influx of PCs into our organizations? Who was buying them? Could they be networked? Would there be a business return on in-Hey, that was nothing. At least then we knew

that PCs were good for - displacing more expensive word

processing systems or more sublesome manual spread Do corporate IS managers and chief information offic have any idea how much Web

site development is going on across their com nies? Does anyone know whether it will pay of? Do we even know how much we're spend Web sites now or will spend in the future? At the moment, the pressure to develop a cororate presence on the Web is intense. Web ma-

sia means the sale of oodles of new software and hardware on which to run it. It means career enrichment for marketing professionals and burned-out programmers. But, in the end, is it all

The answer for the moment is "yes" b the incredible jump in the number of Web users worldwide. I'm one of those analysts who is bull-ish about Web-based commerce. But Web-based rce is no picnic. Costs are high, the Web is getting crowded, and measuring the return on in-

er when we used to worry about the unvestment of a Web presence will be a very quishything.
The costs of developing high-end Web site crashed through the S1 million barrier long ago.

Early feedback from International Data Corp. (IDC) surveys indicates that at Web sites designed to support high-transac-tion loads, development costs tend to run four times higher than

To bring ISDN to the island, "Nynex has to up

date its entire set of switches, which cost h

dreds of thousands of dollars each," Lopez How

ard said. "They're going to do this so a few folks

can run up a few pennies more in charges? There's oo way it's worth it to them until dema

There you have it. This despite last year's ef

fort by the Federal Communications Commission

al to rationalize ISDN pricing nationwide. It want

to boost ISDN. The FCC in May put out a prop

on the topic, in part because of the governor

and his brother (or sister) devel ing a Web site, the number of

Web pages will skyrocket. Ac-ng to our Internet Commerce Market Model, there are already three Web pages (as meared by uniform resource locators) for every

At the current rate of development, the ov population of Web sites will become apparent about the end of the year. Your Web site, like Wal-do in a wall-size "Where's Waldo?" poster, may ave trouble standing out in the crowd.

To illustrate, we've developed the IDC Web In-

dex. This is an equation that takes the number of hours users surf the Web in a month (shoppers). wided by the number of Web pages (staff to up), and multiplies it by transaction levels (what ney spend). The index should at over 700 at the ng of this year, up from 100 a year ago. It's expected to hit almost 900 at midyear but then

drop 300 points by year's end as the glot of Web pages catches up to the growth in users. Frankly, there will be Web sites and th

will be successful Web sites. Only a small tracti of sites will generate the majority of real Web commerce. We predict that of the 170 Fortune 500 home pages identified last December, fully 20% will be retired — support will be pulled and development stopped — by the end of the

My advice: If your organization is rushing pell-mell into establishing a Web presence, it had bet-ter start thinking about how to make that site stand out, how to generate productive traffic and how to measure success. Furthermore, if the site is to pay its way, the organization had better plan to spend a lot more on support infrastructure, d pment tools and design con

anwhile, user departments are deve seir own Web presences willy nilly. Their W sites don't comply with a corporate design stan-dard, and they generally offer idiosyneratic win-dows into corporate information. Sooner or later, they will have to be roped into a common corp

rate Web strategy, infrastructure and identity. By then, those individual Web sites will be come unwieldy legacy systems. Güess who'll have to straighten out the mess?

sta is senior vice persident at Interneti Corn in Framingham, Mass

JANUARY 29, 1996 (http://www.computerworld.com) COMPUTERWORLD

The FCC is

bogged down, and Nynex has no incentive to bring ISDN to Long Island.



The cost of a high-end Web site has crashed through the \$1 million barrier.

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Now that one company offers an entire family of mobility solutions, those gurus are going to look like geniuses.



# IBM teaches VM, VSE new mainframe tricks

#### By Craig Stedman

BM's attempt to make mainframes less stodgy is directed mostly at the MVS-based systems that dominate big corporate data centers.

But it doesn't stop there The computer giant also is trying to add a little zest to the smaller slabs of big iron that run its more obscure VM and VSE opersting systems. Those products are cetting a dose of modern medicine that users hope will

#### perk up their System/390s. While MVS brings in most of

the System/390 revenue, VM and VSE still account for 63% of the 13.784 U.S. mainframe operating system licenses counted by Com puter Intelligence InfoCorp in La Jolla, Calif. The two are often used together, with VM hosting one or more VSE application environ-

A long-promised new version of VM is finally becoming available, in stages. Base compliance with the Posix open systems standard came out late last year, and IBM is

now field-testing code that sug ports graphical user interfaces (GUI) and the Open Software Foundation's Distributed Computing Environment (DCE).
The canabilities for devel GUIs and action as a client in

DCE oetworks are scheduled to ship in late March, completing the first round of development on VM Version 2. More robust GUI fea-tures, including icons and drag-

and-drop support, will be added at an unspecified date, IBM said. A VSE update, also called Ver-sion 2, was finished in the second

OF THE THREE, TARGETED AT LARGE ON-LINE TRA

VM - GEARED TOWARD INTERACTIVE USES SUCH AS E-MAIL, CALENDARING AND APPLICATION DEVELOPMENT, VM ALSO CAN HOST VSE SYSTEMS TO GIVE THEM ACCESS TO A SECOND CPU.

half of last year with support for of VM enterprise systems at C multiprocessing and other addi-

University of New York. The school, which is beta-teiting Ver-sion 2, uses VM for electronic VM's newfound GUI should jazz up applications and let some processing tasks be off-loaded to mail, application development LAN backup and student comput

keeping, Quinones said. Quinones said the first phase of

which will involve

about 1,200 employ-

ees, will focus on the

hardware change to

the Stylistic 500s.

For now, the old ap-plications will run on

the new system

while the new soft-

ware is being de-

Sales representa-

ceive and send elec-

tronic mail back to

tweight devices and are excited to have access back to

Quinones said users are pleas with the lightweight devices a

The company is also switching from a DOS-based system to

Windows, which has been, Qui-

nones said, "culture shock, but a nice culture shock. People are

really happy with the case of

the office via E-mail

# Fuitsu tablet fills Searle prescription

Sales force automation project needed pen applications, connection to office By Mindy Blodgett iary of Monsanto Co., used band-Fulltry device is important for sig-

We're doing a

pretty substantial

upgrade of our

sales force auto-

held, pen-based devices from Grid When Chuck Quinones west Systems Corp. - makers of the looking for an appropriate device early pen-based computers. But when Grid went out of business, for a new sales force project at Searle Pharmaceuticals, he found Searle turned to the Fujitsu Stylisthe pickings slim. tic 500, a tablet computer that

"There just isn't a lot out there." costs \$2,175. said Quinopes, associate field director of sales force Searle. 'We needed a pen-based

system that would also beln us maintain inventory, do bar-coding and connect back to the office. That was a tall order."

For years, sales regres at Searle, a Chicago-based subsid-

on orniect, and the Fulltone filled the hill " Outnomes used The Stylistic 500, made by Puit-

su Personal Systems, Inc. in Santa Clara, Calif., has an Intel Corp. 1486DX2 processor with three ex-pansion slots. These include space for a Type III PC hard disk or a Type II solid-state flash card, plus two slots for ettner two 125. 1/E PC cards or one Type III PC as two slots for either two Type

Tim Schmidt, an analyst at Encore Consulting Group, Inc. in Longwood, Fla., said the Stylistic 500 makes sense for pharmaceutical companies because they need a lightweight device that will run

The device is good for executive users because it also comes with a keyboard

He said the instability of vendoes in the pen market has made it difficult for users to settle on a

"Twe known of some pharm ceutical companies that started tales force automation projects. the sales force automation rollout.

and by the end of the pilot, the device has been yanked from the said. "That has hanpened many, many times." Schmidt said that by contrast, the Fu-

jitsu machine has good technical features and comes from a stable ven In contrast to Fu jitsu, other compa nies, such as Tebron Corp. and Nors

Corp., make hand-held, pen-based deices with more rug

are more for field service techni cians," Schmidt said. Because of the dearth of op tions, some companies are turn-ing to personal digital assistants such as the OmniGo 100 from ewiett-Packard Co., be said.

ecause of federal regulat quiring more accountab from pharmaceutical companing tracking drug sales, the har PCs, said Arthur Ecock, manager It's time for something a lit more flashy" than typical 3270 terminal screens, Ecock said. How-

ever, longting VM users may have to "crack open our textbooks again" and learn new progra ming languages such as C++ to fully exploit the GUI capabilities. nature-capturing and record-

"There's a lot of work still to be done. It won't be like Windows yet." — Arthur Ecock, manager of VM

IBM also had to shift gears af-

ter its first GUI prototype was too slow, Ecock said. As a result, the March release will be able to build only rudimentary GUIs without drag and-drop options. "There's a lot of work still to be

tives will have the done," he said. "It won't be like Windows yet." Another issue to contend with full suite of Fujitsu offerings, including a keyboard that can is whether third-party software be plugged in to vendors will invest time and money to overhaul their VM applicalow users to re-

tions with GUIs. "When you're dealing wit third-party vendors, we're kind of the poor shirttail relations to MVS shops," said Stan Johnson, direc-

tor of management information systems at Worldport LA, the port authority for Los Angeles. Still, Johnson said he Js is trigued by the promise of a mouser-friendly VM. Worldport

ort LA has moved its construction management to Unix-based systems, but financials, billing and pieces ron under VM and VSE



JANUARY 29, 1996 (http://www.computerworld.com) Computerworld

re International, Inc. has introduce al Archive New/400 for IBM's AS/400.

According to the Colleyville, Texas, com-may, the product lets AS/400 users comess and archive to tape or delete spool s by out-queue. The spool files are rolled off the system for later retrieval and re-

ing of the original spool file The product provides a menu interface and leads all current out-queues for man-

ement without user input, thereby elimi ne start-up time. It supports retrieval search criteria and information on which pe to mount Pricing for Spool Archive Now/400

starts at \$1,495. (817) 366-4615 Panasonic Communications & Systems Co. has introduced a five-disk, guad-speed

autochanger, SQ-TCS00N. According to the Secaucus, N.J., comp ny. SQ-TCS00N is a networkable auto

changer designed for multimedia us who regularly access multiple CD-ROMs. It lets users load and access up to five disks d includes software that lets users switch CD-ROMs by pointing and clicking onscreen. The drive weighs 2.9 pounds, has a

600K byte/séc. transfer rate and installs in a 5 V-in., half-beight drive bay. SQ-TC500N costs \$399

**▶** Penasonic Comm (201) 348-7000

Texas Microsystems, Inc. has introduced Hardbody, a handheld PC.

According to the Hor fardbody is a pen-based, handheld PC that features a 75 MHz Intel Corp. 1486 processor, 8M to 32M bytes of RAM, a 260M-byte hard disk drive and a Type II and Type III.

PCMCIA slot. Pricing for Hardbody starts at \$3,975. Texas Microsystems (713) 541-8200

CalComp, Inc. has unveiled Techlet Color GT, a family of wide-format color ink-jet plotters designed for use in graphic arts and computer-aided design and architec-tural applications.

The Anaheim, Calif, firm said the plot-ters have high-capacity ink cartridges, plot on many types of media, include a variable-

width rollout media adapter, feature plot pesting and provide fast throughout. Pricing for the TechJet Color GT models starts at \$5,295. ► CalComp

(714) 821-2000

InterNex Technologies, Inc. has intro-duced NexPhone, a PC sound card. The Santa Clara, Calif., firm said Nex-Phone is an external sound card that atta ches to the parallel port of a laptop or desk

top PC. It gives users sound over a dynamic range of 72 decibels and uses 480K bytes of disk space for a 60-second recording. NexPhone is an integrated package with out outside wires. It has stereo capabilities through two integrated speakers and an in

ternal microphone for recording. It is Win-dows 95- and Sound Blaster-compatible and weighs less than 12 ounces. Pricing for NexPhone starts at \$229.

InterNex Technologies (408) 727-6584

**Product short** 

WinGate Technologies, a division of MITech, Inc., has introduced WordMerge Plus, a product for merging DOS account-ing data with Windows documents. It was designed to merge on-screen data with more than 30 Windows documents and la-bel templates in Microsoft Corp.'s Word. Novell, Inc.'s WordPerfect or Lotus Devel opment Corp.'s WordPro. Cost: \$295 per user. WinGate Technologies, Morristown. N.J., (201) 539-2727.





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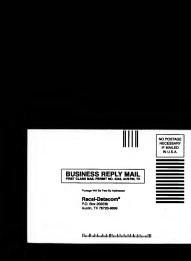
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# German travel service picks Tandem

IBM mainframe? They'd been there. Unix enterprise server? They looked at it. But when it came time to pick a scalable computer system for their on-line reservations system, managers at the German travel service Deutches Reisburo GmbH picked a proprietary server from Tandem Comput-

A longtime IBM mainframe shop. Deutches Reisboro (DER) in Frankfuri chose a four-processor massively parallel Himalaya server, in part because its new reservations application was designed for Tandem's NonStop Kernel operating system. Three hundred users on Windows PC clients access the system, called Phoenix,

Inc. in Redwood City, Calif.

Tandem's offering of a sta ble, reliable platform that can scale with the firm's processing requirements was as important as the application, said Godrun Schoen, an in-

Schoen said hardware fault tolerance in a requirement for the Gen travel service, which processes 1.4 million reservations per year. The agency connects

to systems at 6,000 travel offices in good choice. It looked more secure than a Unix system," Schoon said. And DER expects the Tandem system will cost less to maintain than its mainframe did, Schoen

Pentium Pro PCs are here

By Bob Francis

Brace yourself. A torrent of Pentium Pro systems designed for power users in networked and non-networked Windows NT environments is hitting the market, The Pentium Pro is Intel Corp.'s first

h-end processor specifically designed for 32-bit applications. According to Martin Reynolds, an analyst at Dataquest, Inc., a research firm in San Jose, Calif., the high end corporate environment that runs un Windows NT is "really the only spot that .

makes sense for these systems until Pentium Pro server chio sets are ready Those chip sets are expected to be reads ometime in the second quarter. Servers ould follow soon after

While they wait for Intel's server implementation of the chip, PC vendors are flooding the market with high-end desktops (see chart), Dell Computer Corn. lewlett-Packard Co. and AST Research, inc recently announced new Pentium Prodesisten mesterne

ell gets the jump Quickest out of the chote with its Pentiu

Pro system was Dell in Austin, Texas. The company is shipping Dimension XPS Pro150, a 150-MHz Pentium Pro-based minitower PC. A 200-MHz Pentium Pro ver on of the system will begin shipping by the end of February

processor and 16M bytes of RAM.

ror correction technology designed to de-tect and correct single-bit memory errors. Error correction has been used in servers for some time but has become more important on desktops as companies begin to de-ploy them in mission-critical applications, said Mick O'Rourke, vice president of mar-leting at TechWorks, Inc., a memory supany also in Austin

Palo Alto, Calif.-based HP is adding three entium Pro-based Vectra PCs to its line. The PCs, like Delf's, were designed for use

in 32-bit operating system environments. They will ship in late February. The HP Vectra VT 6/200, which uses the 200-MHz Pentium Pro, is a uniprocessor system designed for non-networked envi-ronments and doesn't include error check-

ing and correcting (ECC) memory. The two Vectra XU models - the 6/180 ith a 180-MHz Pentium Pro processor and the 6/200 with a 200-MHz version of the processor — use 64-bit dual in-line memory dules and include ECC memory. They also support dual processing on the moti-erboard and include a Peripheral Compo-nent Interconnect-based 10Base-T/100VG

Anvi AN network card. AST Research in Irvine, Calif., this week is expected to add the Pentium Pro processor to its Brave desktop line. The Brave MS-T 6150 carries an aggressive street price of \$4,560 for a system with a 150-MFLs

Dell's Dimension XPS line of Pentium

		NAME OF	Section 1	-	2000
house of the				more a	-100
aprells of the			-	100	- 46
					- 10
Serven 4-P				-	- 40
CAMPBAGE TO	anders Nord	Stop SQL, w	ith Fourth Di	nension sol	beare
Houses or	-		-		2000

EXT: Approximately \$17 million\*

Germany and airlines, hotels, currental

agencies and other travel providers (see

We thought Tandem could be a very

DER rolled out the first production plus

of the Phoenix system on the Himalan

server in December after more than a year

of development and testing. The firm's mi-

gration off its IBM MVS system should

Yuri Vizitel, a consultant on the project

clude by the middle of this year, said

MOTELY: 6,000 in Germany

Future plans call for offering travel information to coners on German on-li

rrnet services and estab hing wide-area network ections to DER affile in Europe, Japan and t U.S. Schoon said. make more than half the

made by telephone. Because of this, DER's business depends on fault tolerance, he

Analysts said DER's choice of Hi bucks the computer industry trend of buying Unix enterprise systems and under scores the value of proprietary systems for

no tignificant when a company like that thooses a less conventional option," said systems consultant Richard Winter, president of Winter Corp. in Cambridge, Mass. He said it shows that "Unix is increasing in robustness and manageability all the tir but it doesn't have the maturity of an er ronment like the one Tandem delivers.

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# Data mining chisels its niche

f knowledge is power, then software designed for so-called data mining may be the most powerful in the family of data query tools.

Data mining software is an offshoot of university-based artificial intelligence research and the most complex and technologically phisticated of data query tools. Those include ad hoc query and reporting software and multiensional analysis products.

The most popular data mining tools use an underlying technology called a neural network. The network uses rules that it infers from patterns in data. Other popular technologies for data mining

tion, data visualization and nearest-neighbor analysis. Many products use some combination of these, often with their own unique algorithms.

Independent search Mining your data means letting the software answer vague questions and discover unknowns for example, finding patterns or correlations that haven't been noticed before. It is the opposite of querying data, where quest and their answers are specific in query and targeted in subject. For example, any simple quer

ing tool could determine how many fewer batches of polyurethane

ally by a chemical plant because key filters were clogging. But only a data mining tool could be programmed with every step in the nanufacturing process.

It would then use that knowledge to draw its own conclusions about what was causing the clore. said Kerry Kelly, a supervisor at Rubicon, Inc. in Geismar, La., a usacturer of polyurethane

"We couldn't formulate a good theory about what the problem was because of its complexity. The neural network learned the process untroumbered by my theory, which helped us gain an understanding." Kelly said. That derstanding saved the compa-

Concerto Capital Management, Inc. in Minneapolis uses a mix of homegrown and commercial data mining products to decide which of thousands of variables may have some value in predicting stock, bond and mutual fund markets.

"In the end, it always comes down to a human decision, but data mining in useful when there's a lot of data and you want to find which is meaningful to your prob lem," said Philip Hotchkiss, presi-

dent of Concerto. Data mining tools yield five types of information, said Herb Edelstein, president of Euclid Assotecting occurrences linked in a single event sequences, or detecting events linked over time classifications, or inferring conclusions about groups; clusters or creating groups; and forecasts or estimating future values based

Data mining tools tradition have been used in scientific and engineering settings but are becoming more common in business environments.

"There was an increasing inter-est in these tools [last year], which I foresee continuing into (this year), with a possible explo-sion of buying in '97," said Alexis dePlanque, a research analyst at Meta Group, Inc. in Stamford ciates, a consultancy in Potomac,



Mining	your	OMI	data
A sampling	of data	mining	products

Angoss Software International	KnowledgeSeeker	Finance	\$1,000 per user
Cross/Z International	Fractal Data Mining System, Fractal Multimodel*	Direct marketing	\$250,000
Data Wind	Data Mind* (name may change)	Retail, tele- communications, finance	Not yet set
HNC Software	Outabase Mining Marksman, Database Mining Workstation	Direct marketing	\$37,500 to \$48,000

Vender	Produ-1	Areais) of use	Proces
Information Discovery	information Discovery System, Corporate Vision	Retail, banking, finance, manufac- turing	\$690 to \$25,000
Information Harvesting	Information Harvester	Retail, banking, insurance	\$15,000
Stanis International	Hnet, C. Darwin II, Expert Rule Analyser	Finance	\$195 to \$6,995*
	NeuralWorks Professional II Plus, NeuralWorks Predict, NeuCop	Finance, manufacturing	\$1,995 to \$50,000
Neuristics	No named products; offers customized	Banking, finance	\$75,000 to \$1M

# Paradox 7.0 calls on Experts

By Howard Millman saled just below the deceptively simple vencer of Berland

Paradox is a competent, objectnted database. The product, which is in its 10th year and 12th iteration, combines technical merit and case of

use. This allows it to meet the peeds of povices and experts. Paradox 7.0's major enhance-

nts include a 32-bit Borland Database Engine, full ANSI-standard SQL92 support and an animated, voice-annotated introduc-International, Inc.'s revamped tion in the CD-ROM version. Despite its new engine, Para-dox 7.0 maintains backward and forward compatibility with Para-dex 5c it runs on Windows 95 and

Windows NT. Paradox 7,0 features Expe which are interactive macros that simplify the most common data-



base design tasks. Experts, which are equivalent to the wizard applications in Microsoft Corp.'s Access, level the playing field for novices and let them progressively learn the intricacies of database design.

Easy does it with Experts Experts walk you through the process of creating forms and tobles, running mail-merge applica-tions, building charts or importing ASCII data. Real experts can ct to skip these proxy Experts We used the Startup and Dataproduct inventory database in 15 minutes; we just had to answer the Expert's questions. We used the Database Expert to modify one of the eight sample database

that Borland ships on CD-ROM. We wish Borland would have in-cluded more varieties of the timesaving, pre-made databases. Paradox 7.0's Launcher Expe

wraps menus around forms, tables and queries and packages them into inini-applets that can be launched from Window 95's Start menu. The Report Expert offers several eye-catching display op

have Experts to design a simple Paradox 7.0, page 52 MRY 29, 1996 (http://www.computerworld.com) COMPUTERWORLD

# Windows NT support boosts newest B&B package

he latest release of Boole & Bobbage sc.'s Ensign R3 client/server systems adstration package adds support for a or component of many corporate client/

This support gives Ensign R3 access to nearly all the operating systems that are used in client/server applications today.

Ensign R3 also includes the It also brings Ensign R3 in line with Com-· A distributed control console puter Associates International, Inc.'s CA- Surveillance and autom modules.

The package supports Novell, inc.'s NetWare and most

Unicenter one of its competitors. er applications — Windows NT. Besides the support for Microsoft Mass. Chapter American Society for Training and Development presents:

· Interoperability with scheduling, soft-

The customizable console integrates alert and systems administration functions and allows routine alerts to be distributed to junior administrators and help desk staffs, said Saverio Merlo, senior vice presi dent of marketing at Boole & Babbage in

Ensign R3 includes more than 50 predetermined filters and automation modtiles, so it can troubleshoot and begin automating systems fixes immediately after stion. The new version will come on CD-ROM, which should allow for an installation time of less than 10 minutes, Merlo

San Jose, Calif

It will ship in the first quarter. Pricing for the package starts at \$5,000.

Data Code, Inc. has introduced Ente

sputing strategies companywide. according to the Orlando, Fla., cor

prise Series 6.0, a tool for implementing

rprise Series 6.0 integrates diffi

departments within an organization and

sales and marketing information. It supports remote communications and data-

se synchronization with geographically

Enterprise Series 6.0 includes modules

otes and list management. It features in-grated business graphics, quote systems

Enterprise Series 6.0 was designed to let organizations tailor their environments to adopt different sales methodologies, re-

structure workflow, create new screens and

Pricing for Enterprise Series 6.0 starts a

reports and expand marketing databases.

for opportunity management, business

des a central relational database for

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mote control software for Windows 95 that lets users control another Windows 95 PC. It has multitusking capabilities that let users run simultaneous sessions of remote control, file transfer and remote printing to one or neveral remote PCs.

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## IRS slow to file tax system modernization

By Gary H. Anthes WASHINGTON

Federal tax systems modernization - one of the most complex, expensive and visible development efforts ever undertaken - re-

mains in deep trouble after nearly a decade of effort The sixth and final report on the effort, released recently by the National Research Council (NRC) in Washington, says the In-

ternal Revenue Service has failed on sever-The IRS hasn't deployed application development basics, such as a systems archi-

plan. performance Electronic filing

plans for process improvement. The taxmen also have been slow to bring in the outside project sagement and technical expertise needed to get the \$8 billion job don

"If the IRS does not address this issue on, soine very large investments may never yield significant results," the report Robert P. Clagett, chairman of the com-

nittee that wrote the report, said many of the system's problems stem from a cul that is hostile to outsiders. "It's a culture of promote from within," he mid. "They've put people in technically responsible posi-Clagett said technically astute people

who were hired for the IRS' recently esta lished Systems Architects Office were "frosen nut" by insiders and weren't given the authority needed to get things done.

To fix the problem, the NRC report recom-

mends the IRS do the following: · Hire more top-notch technical ma Develop systems performance metrics. Develop an architectural definition and design enforced by a strong set of interface cifications for key application

· Significantly increase attention to securi- Implement a process improvement pla • Focus efforts on one key project in order

to develop and prove methodologies for

IRS officials couldn't be reached for com-ment. But in an "update" to the report, the IRS said it has started to address each of But Clagett said the IRS has rethe same way to previous reports. Sim reports issued over the years by the U.S.

General Accounting Office also have re-ceived a cold shoulder from the IRS. "None of the hierarchy understands proj ect management or the technical issues, be said. "Some of the committee member e come to the conclusion they are not nced enough to understand our is-

# Microsoft scoops up Vermeer

Until Jan. 16, Microsoft Corp. couldn't offer World Wide Web esthusiasts any substan-tial tools designed specifically for building internal or external Web applications. Now it has Vermeer Technologies, Inc. in its sta-

ervers said Microsoft's Internet Assistant is little more than a translation de-vice, while its long-promised Blackbird development kit is not yet shipping (see

But the buyout gives Microsoft a p tially valuable offering: Vermeer's Front-Page, a Windows-based application devel-

opment kit designed to let users - not click their way to building Web sites. Now dissolved into Microsoft's newly

formed Web tools unit, Vermeer was founded 18 eths ago on "die idea of having normal people out there creating Web [sites]," said Randy Forgaard, co-founder and

chief technology officer bridge, Mass.

"It's the most inno product I've seen," said Briss Moura, an as

sistant city manager and webmaster for the city of Son Carlos. Calif.

Mours, who has been evaluating Front Page for several months, said he is im pressed with the product's features for managing and tracking the various individ-

hot links at a be said. one bought the

the deal at \$130 million. Off

cials at both co

ment on financial terms other than to say the acquisition was in exchange for Micro-

soft stock. oft a half-step ahead of rival Netscape Communications Corp. in the Web tools and Live Wire Pro -

but they are due out Some observers wonder whether Micro oft will make good on Vermeer's origina

ses to support a wide range of data rmeer [engineers] never had a vest ed interest in supporting one language or

database, but now they certainly do," said Anthony Wood, CEO of Iband, Inc., a San Francisco firm that competes with Vermeer in Web development tools.
Forguard disagreed. "Microsoft folks

ave concluded that they need to support multiple vendors' solutions," he said.

Yet Microsoft plans to rewrite parts of rrontPage so that it works smoothly with the Microsoft Office suite, said Chris Peters, vice president of Microsoff's Web ring products unit

But FrontPage and Office will remain separate, unbundled products, he said. Similarly, adding support in FrontPage for Microsoft's SQL Server database "is an important priority," said Pete Higgins,

retip vice president of applications and ontent at Microsoft. Meanwhile, "the great majority" of Ve

meer's 40 employees will move cross-cour try to Microsoft's Redmond, Wash., locale Forgaard said.

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#### **Electronic forms market begins to fill out** But the electronic dent of Coastal Data Solutions, orms market is on Inc. in Plantation, Fla., a systems ance company in Se-He said be doesn't

Br Surachi Mohan

Forms. They are the glory of the bureaucracy, the stuff with which

And even in the electronic world, they are proliferating. The electronic forms market is estiated to be worth \$100 million ad is expected to spawn a \$250 Allon niche by 1998.

It is easy to see why, Forms are an al fact of life in insurance, sith care and financial services

Users in these and other industries are especially keen on the notion of leveraging their networks to take advantage of electronic forms and eliminating some of that paper trail along the

mation of forms offers enormous re-engineering bene-fits," said Michael Hennessey, corporate vice president at Paine-

Jeff Weeks, a senior systems

let will buy Seros at Corp. in Costs Mess, has assounced that it

analyst at Safeco Corp., an insur-

but he uses Symantec Corp.'s Delrina FormFlow to write stock letters to cus-Market change Webber, Inc. in New York. "Paper This process (orditakes time, introduces errors, takes a lot of cycle time to execute

attle, agreed.

use forms routing.

narily) would take three days," he said. daining that with out the software, a letter would have to

be written from scratch every time it needed to be sent to a client. Now, it takes a few minutes to

merge the address with the text and proof it, he said. "Additionally, its gives us consistency in dealing with custom

ers," Weeks said. Paradox 7.0

CONTINUED FROM PAGE 49

tions, including three-dimensional and shadow-framed choices. and a variety of page, time and page number options.

A Mail Merge Expert uses Mi-crosoft's Word or WordPerfect's word processors to create documents. We created a simple letter to test the WordPerfect 6.1 Mail Merge feature, and Paradox 7.0 Issueched WordPerfect and auto-

matically completed the merge in Paradox 7.0's object-oriented programming language, ObjectPAL, has more than 100 new features, including electronic-mail func-

tions that comply with the Mes-saging Application Programming New features let deve control indenting and the color of

object properties Other features provide syntax highlighting, 32,000 levels of un-

do, bookmarks and keystroke re Paradox 7.0's support of ANSI-standard SQL92, Borland SQL

and Open Database Connectivity lets it provide front-end services such as queries to Oracle Corp., Sybase, Inc., Informix Corp. and other major databases. In informal trials run on a clone 486DX2-66 with 16M bytes of RAM, Version 7.0's query by ex-

the cusp of a major change that will shift its emphasis from filing and tracking to data ac-cess, said Steve Weissman, 'presi-dent of Kinetic Infortion, Inc., a consultancy in Wal-

nam, Mass. Forms as m ent ends to databases will become

As a result, forms will have to build companies will have to build differentiators in to their prod ucts, he said.
"In themselves, forms are not useful. The real use is in [their] integration with other applica-tions, said David Furnish, presi-

Paradox 7.0 also sa

Object Explorer, an update of Version 5's Object Tree, gathers

and displays an application's

Symantec's Delrina FormFlow is one example of application inte-

Another comes from JetForm Corp., which adds value to its forms product by letting users ipulate data or convert numbers to ber codes on a form

You could do that with [Power soft Corp.'s PowerBuilder, but it would require a lot of program-ming," said Vas Rajan, a network administrator at Coopers & Ly-

brand in Parsippany, N.J. On the other hand, the prod ucts that rely merely on the interface - such as Novell, Inc.'s In-Forms and Microsoft Corp.'s E-Forms Designer - won't do as well in this market, predicted Ultas Naik, on analyst at First Albany-Meta Technology Research

queries ran noticeably faster than forms, tables, reports, scripts and

The right mouse button provides a series of shortcuts during form and table design, calls mewhich lets users buy third-party add-ons. Version 7.0 can be used nus, and lets you summon object properties through Object Enas on OLE controller and on OLE

By deftly con By deftly combining competent technology and intelligent design, Borland has transformed Paradox into a worthy com esitor to Mi



events, properties and methods in a configurable, three-tabled Technical superiority aside, however, a free-standing Paradox faces on uphill climb in competing with a database that is part of a

We liked the convenience of navigating through a project en-ing Object Explorer's hierarchical display. But we experienced some minor problems keeping the Ex-ployer "planed" on top. In the "thoughtful touches" de-partment, Paradox 7.0's Project

wer lets you view s project's

similar queries that were run us-ing Version 5. crosoft Corp.'s OLE 2.0 controls.

Pereiox 7.0's Expert macros k gramming novices and prof crosoft's Access.

> best selling suite. man operates the Data Syst Services Group, a networking and

If you exclude

object technology is quite beneficial.

POWERED BY PROGRESS



# enterprise this chart an EKG.

# recognize the two III

"Other tools promise what Informix delivers nowapplication partitioning, compiled code, true object technology, tight integration with a truly scalable database. Our business and our customers could not wait."

- Pat Garrehy, President, Relevant Business Systems

Description of the most the prin qualifies. (A) Com-

features we know to be I

application de la lace technology, application scalability, platform up strong on NewEra. tures don't even

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The prognosis is a .... want a second opinion. Motorola, Lockheed or any users. They will tell you deliver healthy apple

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1 - 8 0 0 - A N I X T E R

# ComNet to deliver product avalanche

eople who thought the Blizzard of '96 hit hard will find themselves much hannier with the storm of new netrking products at ComNet '96 in Washington this week. Some of the more interesting

products include the following: • NetSyn Technologies, Inc. will monstrate Perforsoftware that lets

Cisco Systems, Inc. router users get a snapshot of traffic flows in NetSys will also unveil Perfor mance Solver, which lets manag-

ers perform what-if scenarios to assess the impact of changes and problems off-line. It can show use of network resources and applican-enecific traffic flows. Ascend Communications

Inc. will unveil the Pipeline 130 remote access router, which gives users choices in linking rem sites to corporate networks. It offers among the broadest support of wide-area links on the market, including Integrated Services Digital Network Basic Rate-Interface lines, switched bit/sec. bandwidth-ondemand connections and 56K bit.

sec. digital data service (DDS) and frame-relay lines One logatime As-Baseliner, Internetworking cend user said compenies can save money by choosing the Pipeline

130 with a T1 interface over a lowend router and a separate T1 ac-Ascend has "broken the price/ performance barrier at around \$2,000," said Robert Berger, chief technical officer at Interex Infor mution Services, Inc. in Santa Clara, Calif. "Until now, no one

had this functionality in one small.

\$25,000 (201 to 700 router \$15,000 (76 to 200 router \$10,000 (1 to 75 routers) IGX-8 IPX/IGX Port Conce IGX/IPX Voice Shell

sy-to-use box at this price." StrataCom, Inc. will show off a suite of new products that will enable users to add more than just

high-speed data to Asynchronous Transfer Mode (ATM) net-The wendor will unwell a lower end eight-slot version of its 16-slot Integrated Gigabit Switch (ICX)

ATM system. The new IGX-8 has 1.2G bit/sec. of bandwidth and can support high- and low-speed data connections, voice, framerelay and ATM links from 128K to

155M bit/sec the IPX/IGX Port Concentrator, a device that boosts by a factor of 10 the number of ports its

by four fold. Also on tap is the IGX/IPX Voice Shelf, which enables the two switches to support more

Ell Lilly takes the pulse of network performance with

# Cheyenne rolls out speedy tool

Customers of network-backup leader Cheyenne Soft ware, Inc. next month can expect a burst of speed and new access to Novell. Inc.'s NetWare Directory Services (NDS). Cheyenne's ARCserve Version 6 will include a

ther level of support for NDS, new agents to imove performance, live backup support for Lotus velopment Corp.'s CC:Mail and centralized ad-Chevenne, sam 60



# IS managers find security in numbers

Pairing of NT Server, NetWare ensures uptime, reliability, scalability

By Laura DiDio Steve Huff is hedging his bets.

He has to. He directs network services at The Williams Cox, a multi-billion-dollar Tulsa, Okia, conglomer-ate that is in the midst of building a leading-edge enterprise network to serve 7,500 users nationwide. Huff is the lucky guy charged with

ensuring 100% network uptime, reli-ability and future scalability. The second the network goes down, the phone starts ringing, an downtime isn't an option," he explained. But from a practical standpoint,

Huff said he couldn't find any singl network operating system that suffi-ciently met all the company's criteria. So, like many of his network admin strator peers, he opted to implement oth Novell, Inc.'s NetWare 4.1 and Microsoft Corp.'s Windows NT Server 3.51.

"It was a pretty clear-cut decision," Huff said. "NetWare 4.1 has more advanced directory services and superi

The combination of the two, he added, is a

"very good insurance

Batting on Banyan Until list fall, the conserute had spent nearly 10 years as a Banyan Systems, Inc. Vines shop. While Vines still met most of needs, Huff and members of upper manage

"Many crucial third-

and that was very limiting. We were So The Williams Cos. forged a notalso worried about Banyan refreshing work operating system strategy that is Vises, and we trankly lost faith in effectively a 65%/25%/10% split — in



Fast

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# New routers add speed, cost less

Compatible Systems, Inc. in Boulder, Colo. has introduced the Ad-

Cheyenne rolls out speedy tool

sanced MicroRouter provide users with In ternet access and multiprotocol wide-area network connectivity at speeds that range

from S6K bit/sec. to T1. The latest MicroRouters are aimed at small and medium-size businesses that need the higher speed connectivity of 1.544M bit/ sec., or TL (and the 2 44 bit/sec. of El, the European standard) and the security provided by dual-Ethernet firewalls

The new routers - which have list prices that range from \$1,495

for those classes of users," said Eric Hindin, an analyst at The Yankee Group in Boston The Advanced Mi-

**New products** croRouter senes includes two Internet access routers - the 1200l and the 1220l - and two multiprotocol routers 2200R and the 2220R

Each of the devices is equit with two WAN ports. One WAN port is synchronous V35, supporting speeds from 56K bit/sec to T1/E1, the other is a synchronous/asynchronous RS-232C port, supporting speeds of 28K bit/sec. to 256K bit/sec.

The Advanced MicroRouter family will ship in February

#### Operating systems

CONTINUED FROM PAGE 57

Yet The Williams Cos is some NetWare 41's favor, with NT what concerned about Novell los-Server as a distinct but strong ing "some marketing presence because of the Provo, Utah, firm's

second The remaining 10% of the firm's enterprise network operating systems are a maxture of legacy Digital Equipment Corp. Pathworks and IBM LAN Server The network is the lunchpun for

all communications among its tine operating companies. setup includes 50 NetWare 4.1 file servers linked to a variety of Cisco Systems Inc. 7000 series routers spread over the Tulsa beadquarters and locations in Houston, Salt Lake City and

Owensboro, Ky Approximately 20 Windows NT Servers are in place to handle specific vertical market databases in the operating companies.

"We saw an immediate perfor mance improvement when we mit grated from Vines to NetWare 41." Huff said "We got four to five times better throughput in accessing desitton file-and-print ser vices to the desktop, and electron icmail messaging improved

tremendously when we went with GroupWise on NetWare Perhaps the biggest gain with NetWare, he added, was 'the availability of thousands of third

NT Server 3.51 file server. "Both network operating systems are meeting our needs with minimal

problems," he said The economics also are benefit cial because both vendors give decision to sell off WordPerfect

The Williams Cos. migration to centive discounts, he added. The downside is that it is "frustrating and comical to listen to the Microsoft and Novell representatives rat each other out on supposed flaws in the other guy's software,"

#### NetWare vs. NT Server

and exit the desktop applications

For the time being, Huff fore-

sees peaceful coexistence be-

tween NetWare 4.1 and Windows

#### CONTINUED FROM PAGE 52

include a disaster recovery utility

a Windows 95 coasole and an opbonal RAID component. Users said the additional sun port for NDS was an important feature. They've vastly improved their support for NDS, which was tacking in Version 5," said Steve

Glick, a beta user of the software and manager of networking and fistributed computing at Dallas County Commu ney College in

The release lets users back extensions the NDS schema, and netapplica ns, such as Modules can

NetWare Loads ke modificaons to the NDS schema on in-

Can't stop the m Because CC Mail can't usually be shut off to allow for a backup Chevenne now saves the CC Mail use files as the application

se also is including a entrailed job manager that all lows network managers to man age as many as 100 separate intalisticus of ARCserve from a

single location. That will be an im portant feature as networks become larger, said Farid Neema president of Santa Barbara Califbased Peripheral Concepts, Inc., a market research firm Version 6 also adds a disaster recovery NLM that updates the

network, so if the network goes down, users can restore basic NetWare services. Easy or

Chevenne Roslyn holds 59% of trom Heights NY the NetWare based Cheyenne backup include JetServe which is RAID market. fault-tolerance according to software that in tegrates market ASY'some Serve is priced at researcher

\$1,995. For \$495

per server, Chey

enne also offers

oush arents that boost perfor-The agents are NLMa that are installed on secondary servers and prepare the data on those servers for backup to the

Prices for the new software range from \$796 for up to 25 users to \$1 895 for refirmited meets

The Architecture Machine Group

Briefs

International

Data Corp.

#### The Enterprise Network

Qualix Group, Inc. has rolled out Net-Probe, a network security analysis tool

According to the San Mateo, Calif., company, NetProbe scans a local network's address range to detect host misconfigurations that might allow unauthoraced remote access from within or outside the firewall. It can run more than 85 tests and is updated frequently to include tests based on new

advisories

NetProbe is used from a single-host and tests any system that accepts TCP/IP packets. It automatically tests all hosts with no specification for required machines on the network. Once a security analysis is complete, NetProbe points to an applicable advisory and recommends appropriate see:

rity measures.

Pricing for NetProbe starts at \$2,500. It is available for all network sizes

► Qualiz Group

Lantronix Corp. has introduced Lantronix Network Analyzer, an Ethernet protocol an-

According to the Irvine, Calif., company, the analyzer lets network managers monitor several network segments simultaneously to pinpoint the source of network problems. The product has problem notification features that augment the Simple Network Management Protocol and Remote Monitoring capabilities that are built in to some switches.

The product features a graphical interface-based management program that seeks all analyzers on a network and allows instant traffic capture and analysis from a monitored network segment. It monitors segments for packet collision levels, network utilization, total frames and bytes

It also captures Ethernet packets and analyzes them for the conditions that cause the most network difficulties, including packet alignment and packet-size errors. Pricing for Lantronix Network Analyzer starts at \$2.96 for the two-port model.

► Lantronix (714) 450-7227

Laser Communications, Inc. has introduced S Class, a wireless LAN connectivity

According to the Lancaster. Pa., company, S Class provides connectivity for Etherace and Token Ring links in high-speed line-of-sight laser transmissions for distances up to 700 feet. It was designed for short-range applications and provides secure connectivity without cables, reducing the cost of leased telephone lines and pri-

Pricing for S Class starts at \$7,495

Laser Communications
(717) 394-8624

Micro Design International, Inc. has introduced EZ Express 20, storage management for Novell, Inc. NetWare environ-

According to the Winter Park, Fla., company, EZ Express 2.0 automatically man-

ages the migration of data from hard disks to optical media. It can reducet a request to the migrated files without recalling data to primary storage. It also lets users browse or use thumbnail views of migrated data.

primary storage. It also lets users browse or use thurbonal views of migrated data. EZ Express 2.0 installs in the user's primary server and manages the space on the bard disk, eliminating the need for an extra server and software. It creates symbolic link files in place of the original file that directs the user's remust to the secondary.

optical volume. It offers the ability to send information back to the primary device hased on data usage.

Pricing for the product starts at \$1,595.

► Micro Design International (407) 677-8333

Advanced Information Management has introduced AIM/LAN 2000, a contingency planning tool for LAN outages. According to the Woodbridge, Va., comparry. AIM/LAN 2000 lets users identify and document in advance the impact of a LAN outage on required critical applications. It also helps organize recovery

efforts with directions and checklists.

AJM/LAN 2000 includes extensive modeling capabilities to allow what if analysis against the actual recovery needed.

against the actual recovery needed.

Pricing for the product starts at \$3,995.

Advanced Information Management (703) 643-1002



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  - A FIAL FEATURED APPLICATIONS (FTR LPRILPD, INTERNET ACCESS)

Market Market Andre A. - The Committee Andre States, States, States, States Andre States, States Andre States, And

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# The Internet

WORLD WIDE WEB . INTRANETS . ON-LINE SERVICES

# Internet EDI on horizon

Users worry that steep do-it-vourself security costs may spoil the view By Kim S. Nash such and such uptime or X degree of re-

Crotchety, 20-year-old electronic data interchange (EDI) is ripe for an injection of Internet technology, which would supply a newer data transport path that

10 to 20

150 to 200

500 to 2,000

10,000 to 30,000

EDI defined

Electronic data

interchange is an

electronic means for

companies to place

orders, track invents

and bill manufactur

awry. Byles said

is significantly cheaper than the proprietary networks used today In fact, many observers see EDI as the killer application" that will usher the laternet into mainstream informa-

tion systems. But, as in most revolutions, the transition will generate a fair share of blood, sweat and tears, according to users and ana-

Gnawing need Adding Internet technology to EDI applications is 'like solving world hunger," said Herb Phil-

lipps Jr., technology vice president at Royal Bank of Canada in Toronto.

"Everyone's got a int of ideas about how to do it and how beneficial it will be, but it's amazingly difficult," he said. The situation boils down to this: The ternet is far less expensive than pri

vate, proprietary networks from EDI granddaddies GE Informa tion Systems, Inc. (GEIS). MCI Communications

Corp., Sterling Software, Inc. and others But - and it's a critical caveat - going Internetonly means IS folks will have to become EDI

"IS managers would have to pick up a lot of slack. That's just part of the deal" when you use a value-added network (VAN), said Torrey Byles, an analyst at Giga Information Group's Santa Clara, Calif.,

Substitute systems For example, users would have to build or buy their own security products and Money changes everything

GEIS and neveral other traditional

VAN providers have announced plans to

add the Internet to their menua of EDI

service offerings. But they have ac-

knowledged that they can't offer the

same reliability and avail-

the public network that

they make for their own

VANs willing to guarantee

that EDI transactions sent over the laternet are 100%

"We have no control

over the Internet, so we can't tell you that you'll get

etworks. Nor are the

dity assurances about

create redundant backup systems that VAN\* kick in when Internet transmissions go

576 to 5118

Ses to Sug

S216 to 5420

\$1,865 to \$3,775

liability," explained Alan Myers, a GEIS spokesman in Rockville, Md. Thus, neers seeking to cut costs by ing out a VAN for the internet (see chart) may end up spending more money building their own security isms, such as internal firewalls.

and other functions typically handled by This do-it-yourself reality clouds the cost picture. Byles said

"It remains to be seen whether the Internet saves anyone money when you look at the total costs of doing EDI on it," he said. Canadian Tire Corp. in Toronto has rejected

Internet EDI, at least for now, for those very reasons, said Geoff Fredsbarn, the company's director of logistics

"We've been doing (private network) EDI for 10 years and have a tried-and-true way to get the work done," Frodsham said. "Why fool

However, other users are itching to put the internet to work. NASA's Ames Research Center and

network equipment maker Cisco Systems, Inc., for example, are in the midst of fall-bore Internet EDI projects, acding to Byles.

They figure that they already have a good internal (use of the laternet) infrastructure built, so they want to find ore ways to use it." be said.

O Dial-A-Mattress is adopting electronic commerce. See page 60.

er at one of the I

- K3m S. M

#### Briefs

#### Calvert takes its investors on-line

Service addresses security concerns

#### By Mitch Wagner

It's one small step for an invest nt house, one giant leap for oner finance — or so the Calvert

Group lites to think.

Colvert recently brunched a new feature on its World Wide Web house page that lets its invesfeeb none page unit tors check account balances and recent transactions on-line. This makes the Bethesda, Md.,

This makes the Bethesda, Md., ustual fund company one of the rat U.S. investment houses to de investor relations onto the Neb. Many of its competiors and moving onveral U.S. banks are moving on-e, but most run through propri-ery serpices because of security

A growing me.
These things are sprouting up all
over the place. Which will be the ed has yet to be seen," said

Jupiter Communications in New York Calvert officials said the comany has addressed security concerns on the Web by weighing risk vs. convenience.

Investors who wish to check their balances can visit the compa-ny's Web site at http://calvertgroup. com and input their

The acco e and the five

tions - but not the estor's name, ades, telephone or count number and ZIP code — are shows Would-be computer criminals would need to match both sides of the transaction to get any mean-ingful information. The account balance and transaction informa-

marketing strategist for Calvert's

lpha server storage The guts of the application is simple, said Lee Nienaber, Calvert's

webmaster. The information for most of Calvert's 300,000 accounts is stored on a Digital Equipment Corp. Alpha server database from Oracle Corp. in Redwood Shores, Calif. Each night, infor-

. hom ed gateway and placed is two large fat files that run on the company Web server. The files are about 50M bytes each — one contains share balances and transaction information and the other con-

er channels, said Denise Sim

Web oped at Ohio State University, which runs on VMS on a a visitor to the Web site in-quires about an account, the

inquiry gener ntes a Com on Geteway script writ is Fortran and C. which one-

ries the fot files and returns the Calvert decided to use flat files for the procedure to improve performance. The company also entains information about regular

count data in the Oracle database,

has introdu



The cost of building a Web she is high. See page 17.

#### Integralis rolls out 'smart firewall' Dr Shart I Johnst "I would get really interested in MIMEsweeper 2.0] if it was priced differently," said Greg in in a document that you send

The exploding popularity of the internet is heightening the dan-ger of transmitting computer vi-ruses hidden inside electronic-

One way to fight back could be und in a software gateway shipping from Integralis, Inc. is Woo-disville, Wash, MIMEsweeper 2.0 lets information systems manag-ers put an intelligent gateway be-tween the internet and their conies' internal hetwo

attrices 2.0 intercepts all

feware increages pass-Internet, disas-bles them and submits them whatever antivirus-scanning lities users choose. Then it matically quarantines infect

sembled and passed on to their in-MIMEsweeper 2.0 works with

rendor's antivirus product, in-ing Symastec Corp.'s Norton virus. It will disassemble even plex messages such as files ded using the Internet's ode algorithm. It also will de message attachments in Multipurpose Internet Mail naion (MIME) format.

An earlier version of the prod-

ent Corp.'s CC:Mail systems. It didn't support E-mail transmitted using the Internet's Simple Mail Transfer Protocol, said Victor Woodward, president of Integrais. The company is a wholly owned subsidiary of U.K.-based iotegralis Ltd.

Everybody has gotten used to the idea that you don't swap floppy disks, but macro viruses come

Symantec to the rescue

"[MIMEsweeper 2.0] is like a smart frewall although they were taken aback by the price - \$2,500 for the first 100 users and \$7,000 for 1,000

over the internet, which is far, far easier to do," said Chris Le Tocq, director of software research at Dataquest, Inc. in San Jose, Calif. Some users also like the idea.

Scott, information services man ager in the college of business at Oregon State University in Cor-valls. Scott admitted that corpo-rate users are likely to have more money to spend on a product such as this, but added, "I don't think they are going to get widespread adoption at that price."

Promising future Don Barker, associate profess of information sciences at Gonza-ga University in Spokane, Wash. also was concerned about the price but disagreed about the po-

tential market. "Corporations will be inclined to pay for it, so a prod-uct like this probably has a pretty good market," he said. Integralis is planning a string of releases in the coming months. Forthcoming is MIMEsweeper support for the following: • Microsoft Corp.'s Mail in mid-

Novell, Inc.'a GroupWise in March.

 Notes is April.
 The World Wide Web and other net protocols in June. The company also will release a version that directly supports Mi-crosof's Exchange messaging server around midyear, an integ-

order of relevance, fuzzy, agent,

ranks retrieval of documents in Beolean and range searching of date and number fields. HotSearch lets users index Hypertext Markup Language, Adobe Systems, Inc.'s Acrobst and word processing documents.

HotSearch costs \$39.

Executive Technologies

According to the Birn

Ala., firm, HotSearch lets users lo-

cate information in documents downloaded from the internet. It

(206) 933-5494 Quarterdeck Corp. has unveiled InternetSuite 2.0, a graphical front-end software package for In-

According to the Marins del Rey, Calif., firm, InternetSuite 2.0 includes the following: a global chat utility. a CyberSitter utility that lets users lock out sele World Wide Web pages and news-groups and an madio and motion InternetSuite 2.0 costs 840.

Quarterdeck (310) 309-3700



COMPUTERWORLD (http://www.computerworld.com) JANUARY 29, 1996

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LONG INLAND CITY & S a a young man growing up in Oklah Don Cantwell held a number of odd jobs, including a stint as a concrete truck

good thing. because as the recently installed chief information officer at Dial-A-Mattress. Cantwell will need as much erit as he can muster to direct the information systems strategy for the direct marketer of bedding sup-

Cantwell has stepped into a position that is fraught with challenges and oppor-

tunities. In the past five years, sales at Disl-A-Mat tress have exploded by 700%, to \$78 million last year That success stems, in large part, from the compa-Dial-A-Mattrees, page 72

# CASE STUDIES • TRENDS • OUTSOURCING

## Workflow in the pipeline

Canadian utility's system will be a rarity - it's Mac-based

By Tim Ouellette

Some pipeline workers don't need to count on big

iron to get the job done. TransCanada PipeLines Ltd. in Calgary, Alberta, is ning its investment in Macintoshes while installing's 1,000-seat workflow and document manage ment system to support its push into intern

er access to project data and a way to maintain closes

contact with other employees.

About 2,400 TransCanada employees across the country use Macintosbes to help maintain and extend TransCanada's natural gas pipeline, which stretches across Canada and northern portions of the U.S. Workflow and document management pilot projects are running in the international ventures and energy groups. The information systems depart ment also is piloting a workflow project to provide tter service to its widespread user base. All told. ut 11 pilot projects are running comp

Workflow software automates and tracks the ement of work items around an organization; tunent management software acts as a central repository for organizing electronic documents. Mac-intosh-based workflow systems are rare; the market is dominated by Unix and PC-based systems. To help make the most of its Apple Computer, Inc.



#### Eli Lilly's network stays healthy with Rmon

By Patrick Dryden

Pharmaceutical giant Eli Lilly and Co. has implement about \$400,000 worth of moni toring gear to take the pulse of network performance and

chart its health. 'Networks used to be back room stuff, but we needed to mine data from the netwo so linformation technologyl could improve customer service levels," said John Kisel executive director and infor-To do this, Lilly added net-

work performance ed on the Remote Monito secification. Smart modules in a hub or stand-aloné probes

attached to a LAN track use st ally and forward historical data or captured packets to a central analysis

"Rmon removes the unknow about response time," said Tom Re sel, network management syste team leader in charge of Lilly's Rieffort. "Now we can actually pine

wlett-Packard Co. LANes on 160 Ethernet LANs Lilly's Indianapolis headarters and sites across Indi-Central administrators a watch those LANs with Pa NetMetrix Internetwork

ig LAN. Liby's managers d the impact of cha

equipped with a Network General Corp. Sniffer protocol analyzer had to diagnose a LAN when users called to

a distribution systems project leader at Life. Plaberty's order processing bandles more than 1,500 orders daily for 600-plus products. Advance notice let him shift workers at one ware house to a different LAN when a rout er began to act up. Flaherty also was able to avoid slowdowns by detecting

creased hub use at another site. Mike Wiley, a senior telecom cations systems analyst at Lilly, sa Rmos help has streamlined his job. He can track "oddball" protocols to con-solidate users on TCP/IP and models mend the best location for new Win-

ws NT servers Best of all, baseline reports h ninate finger-pointing when infe ion systems groups di plaints about slow app

to open

and the their source and projects

Start

Microsoft

#### Microsoft Project for Windows 95.

Now your company's projects run as smoothly as planned with Microsott\* Project, improve lines of communication with graphical views and multi-project resporting, information about project status and the impact of inevitable changes in schedules, resources or costs flows consistently throughout the organization so users can microdiccisions that are based on sound, organized data. Everyone stays in the loop. Everything stays on target. And because Microsoft Project lest beam members integrate information with other business systems, so the justice is always in view throughout the entire company.

> Communication runs high, everyone cenn Because it's integrated with a wide in Microsoft Project makes it possible for the project information without running into the a single citic, users can communicate task that their whole workgroup can see at once. The stowing down. And by consolicating spainers within databases via Open Database Connectivity (ODCI), every roblect in your commant, from accepting data to you

Microsoft Project has the power to be an integral part of an involved of the power to be an integral part of an involved part of an involved part of the power to communicate with these systems. Because people can integrate multiple comprise databases for risk-up reporting, and dist-integration purposes, you have view of your company's progress. And with the opin and extensible exhibitation. Project through the support of Vissal Besides' for Applications and OLE, users have Nally integrate project information with other applications like Microsoft Ecol.

Microsoft Project data supports multiple platforms.

Microsoft Project this the people in your company yout, with other than the ability to enrich the water of their information and complete through the complete through the complete through the project as a support information.



Microsoft Project works assembledly with Illicrosoft Office, indirectly only over the control of the control of

#### Canadian public up to its CHIN in on-line history, culture

By Suruchi Mohaa

seums may be the caretakers of history, but modern technology is invading those hallowed institutions to make that history more

dily available For example, the Canadian Heritage Information Network (CHIN), a program from the federal government's Department of

Canadian Heritage, aims to/provide information on parks, cultur al activity the arts, multicultural issues and the Canadian identity

Last fall, CHIN broke new ground in museum circles by unveiling on

the World Wide Web a wereice called the Guide to Canadian Mo-CHIN is on-line with its three national inventories, which ep-

CONTINUED FROM PAGE 69

Corp.'s Automated Call Distribu-

tion software. The company uses

the product to route customer

calls among Disl-A-Mattress' call

centers here and in Maryland and

By evenly distributing cus-

tomer calls among "bedding con-sultants" at its trio of telemarket-

ing centers, Dial-A-Mattress has

been able to build a solid reputa-

n for service and convenience

Meanwhile, at its headquarters

here, key managers carry pagers

to communicate with one another

Dial-A-Mattress Ton been at

he cutting edge of communica-

tions technology" since the com-pusy was launched in 1976, said

Roy Unger, a bedding industry

ultant in Barrington, III.

A-Mattress also has gone over-board with some technologies.

But in its 20-year history, Dial-

m'a effective me of co ons technologies, such as AT&T

Dial-A-Mattress: No rest for IS

each other

volved

compass the humanities, natural sciences and archaeological sites "CHIN's application has a social tone and value that is rare. said Jim Bair, research director at Gartner Group, Inc. in Santa Cla-

perfectly suited to each a venture. To doesn't matter if you're inside the orga nuzation or outside; all

you need in a browser." Rair said So far, only Canada

and France are mak ing efforts to bring museum information to the masses via the Web. said Jane Sledge, systems project manager of the art history information program at the J. Paul Getty Museum in Santa Monica, Calif. Sledge has been following CHIN's pioneering efforts. The

throughout its enterprise "We

had a tremendous user training

None of the systems talked to

To better manage the IS infra-structure, Cantwell last October

lem here," Cantwell said.

unications snale between

inventory in Dial-A-

the firm's IBM RS/6000 Model

570 production system and the

SCO, Inc. SCO Unix-based bar

coding system that is used to

Perhaps more importantly, the

company standardized on a com-

mon deektop applications set -

Microsoft Corp.'s Office for Win

had been using a mix of desistop

use and features, said Scott Chate.

senior technical specialist for IS at

TransCanada. The Odesta system

added a lot of value to our envi-

But the system needed to be

Therefore, in terms of comm

utility to energy manage

ws 95 suite that runs on top of

Mattress' warehouse.

intel Corp.-based PCs.

Dial-A-Matteres 300 em

document management software behind these efforts is Basisplus from Information Dimensions Inc. in Dublin, Ohio Basis WebServer is the inter-

face to the Web Museum clients ra, Calif. He said the Internet is can use any browser to access information on the data Posument Sagement bose, said Gail Earen. director of systems and access at CHIN in

Research

advantages "The WebServer is lusefull if I want to research usecific artists across the country be-

CHIN has had a Web page that cause there is no other means to do it," said Pierre Landry, associate curator of Canadian art at the National Gallery of Canada in

Ottown "A major advantage to the docu

packages that included IBM's Ofof sales at Dial-A-Mattress, CaptficeVision/400 system and Microwell said call tracing should be desoft's Windows for Worksmouns livered by year's end He said the firm is planning to

Castomer service By standardizer on one set of office applications, the firm's IS stail has been able to support end users more effectively The company's IS team "is

software

directed an effort under which Dial-A-Mattress standardized on looking at us like we're customers oow," said Donna Riggi, merchan-TCP/IP-based networks. He declined to discuss the costs mdire manager at Dial-A-Mattress. Before the project, "if we didn't know how to fix the systems prob lems ourselves, we were out of The move also helped solve a luck," she added

But not everyone at the company is completely satisfied with its IS operations. The firm's sales division, for example, is disappointed that IBM's CallPath communications software still is missing features such as call tracing.

The software has managed to knock 10% off the company's \$1.4 million annual telephone bill by rliminating crank calls. But CallPath hasn't fulfilled its guarantee of tracing the path of

customer sales calls from start to finish, said Greg Nonney, director into workflow's routing capabili-

cept," he added. This requires more than just document manage-

Users need a way to collaborate on projects and have tasks automated so they can hit contract deadlines for jobs in places such

powerful enough to handle the nges going on at Trans-ada. "We need to go beyond as Tanzania and Colombia The system is up and running our mainline piping of gas as a for 150 users, and the International Ventures Group is looking to or nize and manage the docurets associated with bidding on major contracts. Then it will look ment management system is the lic and other museums, can go to ability to handle full-text indexing and large and diverse types of documents," Eagen explained. The software provides access

to a thesaurus, to help with key word searching, and has a bilingual interface in French and English.

Rasisphus also can refer the user to images, which is a big plus in a museum environment. Eagen

The images can be juxtaposed with text, which wasn't possible under the legacy maintrane environment that bosts the national work, he still uses the system be

provides general information about the program since the summer of 1994 But now CHIN's clients, which include schools, the general pub-

http://www.chin.gc.ca and request information The mainframe-based system which required users to know

commands to get information, limited the use of the national inventories, Eagen said. But the Web, with its friendly interface on the one side and a

powerful document management system on the other, has changed Landry sees the benefits that Web technology provides the pub lic. but he said for his succiai

cut his teeth on 10 years ago That is because much of the information be needs is so specific to his organization that it isn't up loaded on the national database. Landry still types in his commands to get that information.

tional database for its IBM RS/6000 system and connect the software to its AT&T Corp. Definity private branch exchange sysintegrate an as-yet unchosen rela-

tress' home page and server. But that's likely to change be

cause the bedding seller plans to bring its laternet server

back in-house, said Cara Hal-

stead, manager of public rela-tions and interactive media at

The firm plans to use the

Internet server for intranet

#### Firming up a 'net strategy

D empile having enjoyed tre-mendous success in the past 30 years with its non-traditional telemarketing tales approach. Daid A Mattrews is treading carefully when it comes to pitching its wares over the Internet. "Nebody knows how to skin the cut with selling in cyber-ispace." will Don Cantwell, the company's chief Information and Internet access service a New York, hosts Dial A Mat-

Dial A Mattress is proceeding contiously toward electro nerce, even though it

electronic mail and to electrically download software uphas had a home page on the World Wide Web for two years Ottp://www.sleep.com/

early next month, Haistead said. "There's no sense divi in headfirst with electronic commerce when there's no we features of Livelink also are help

ing out in everyday duties. Trans-

Canada uses the software to help

manage the piles of documenta-tion required for regulatory sub-

#### deploying 38 disparate systems **Pipeline**

CONTINUED FROM PAGE 60 chines, TransCanada turned to

Odesta Systems Corp.'s Livelink, a VAX server-based system. The software's user-interface features

played a major part in Trans-Canada's decision, . Many vandors' cross-platform interfaces don't take full advan-tage of the Macintosh's case of

Chate said. er systems, 'we need a total con-COMPUTERWORLD (http://www.computerworld.com) JANUARY 29, 1996 A litting project And because Livelink's collai

tion environment is based on the idea of a project, it fits around the international department's strate-gy. Chate said. For example, users ready are participating across anada in the on-line and threaded discussions that deal with pro-

sions to Canada's national en ergy board. The software has cut down the overall time it takes to prepare, collect and send the decumentation, but specific figures

#### Prudential testing AT&T's interworking service

Users mix and match frame-relay and ATM sites

By Neal Weinberg

The Prudential Insurance Company of America has turned to a new technology called frame relay-to-ATM service interworking to help meet growing demands on the company's wide-area network infrastructure.

Prodestial is one of the first cor to test AT&T Corp.'s interworking service. which allows a user to mix and match frame-relay and Asynchronous Transfer

Mode (ATM) sites. Prudential is midway through a lengthy testing

period and hasn't committed to deploying interworking yet. But based on some positive early results, the company anticipates a gradual, application-specific rollout, said Bill Rush, vice president of information

Prudential currently uses a hybrid of private and public lines that range from 56K bit/sec. to 45M bit/sec. at its 2,000 locations worldwide. In addition to insurance Prudential has financial services, real estate and managed health care businesses.

The network "has been satisfactory for what we've had to do to date," Rush said. But new applications, including imaging, video and Notes, are threatening to strain the network. "We just can't continue with ional solutions," Rush said.

Prudential already has a well-established frame-relay network for transporting data. But before deploying frame relay at additional sites. Rush said he wanted to "come to grips with where we are going as an enterprise.

That's where interworking comes in. Rush said it allows him to "plug those locations that require frame right into the ATM network; that's the big payoff." The interworking service makes the translation between ATM's fixed-length cells and frame relay's variable-length frames. If interworking didn't exist, users would have to set un senarate frame-relay and ATM networks.

Beth Gage, an analyst at TeleChoice, Inc. in Verona, N.J., said interworking is ideally suited for companies that have frame relay at remote locations and want to add ATM at the corporate hub.

Rush said Prudential has some b nits that could benefit immediately from

ATM, which can transport voice, data and of Prudential insurance and financial data is added.

† The health care business could use ATM transmit X-ray images and set up medical es. At Prudential's mainvideo and which offers higher speeds than firame sites. ATM offers the high bandframe relay, For example, remote vaulting width needed for large file transfers, Rush

"a slam-dunk ATM solution," Rush said.

ment from some vendors "was really not positioned well at all for ATM." Rush declined to name those window

But with those bugs out of the way, the frame/ATM interworking Tooks di



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## Generation

Young programmers with hot skills can earn twice as much as their veteran counterparts. IS managers must

ance the two or risk a mutiny.

Bu Jean S. Bonnan





#### CONTINUED FROM PAGE 1

other in the lunchroom.

often feel out of place as young up-and-comers are hired to handle C++ object-oriented programming or modify packaged applications from SAP America, Inc. or Oracle Corp. What hurts the forty-something progra

most is the age factor. "You get the impression they feel they're 'better than thou,' and they're only 25 or 30 years old," says the West Coast pro-Sometimes, the old and the new live under the same roof. When this happens, the two groups of ten avoid eye contact in the office and avoid each

The old-timers look at this new technology and say, 'How much of this is really real vs. smoke and mirrors? There's a resistance, even to go back to school — to start listening, reading, to take class-es," says Bill Nothinger, an applications development manager at the University of Florida at

Our careers last cor

our careers test comments than the lifetime of products in the seaguest industry, says Bill Schimoler, vice president of global LAN services at The Chase Manhattan Bank NA in New York. "So we face the problem of sticking with something we learned well and riding that wave as long as we can or looking for a [new] technology [to learn] as soon as we've really mass tered one." Old-timers can catch up finan with young hotshots if they're willing to learn, he

Old skills, young skills Age isn't the only factor. Young people from tech-nical schools may have learned Cobol instead of the more modern Micro Focus, Inc. Cobol or C++ "I wouldn't call it old people and young people."
says Mike Johnson, president of Texas Triple-I in
Houston, which hires programmers who work with SAP America's scripting languages. "I would call it old skills and young skills."

#### A Step toward open systems

samed in Oracles Pinancias can earn cos to son more.

When corporate mainframe operations are outsourced, old-timers are sometimes "re-badged" they leave a firm right behind the big iron and take a

job with the outsourcer. Out of sight, out of mind. But most companies find this is an unwise solution. The veterans know a great deal more shoot their firm's business processes and rules than the new worker. The disciplines of the maintaine operation, including job scheduling and systems management, are still valuable, especially so client/server systems are finked throughout a corporate network.

#### A team effort

Managers are increasingly calling on old-timers and newconers to work together on re-engineering projects. 'R turns out that the individuals who have the gray hair have been working with the end users for years, and the individuals with the new technical skills have not,' says Prank Dunbeck, president of Communications Network Architects, Inc. a. Washington consulting firm. Tr's a bearing of these skill

sets that has to take place."

Many IS organisations are achieving this blend by teaming veterans and newcomers. Teaming helps Chase move more into distributed computing and maintain links to several large data centers. And working in teams helps reduce intergroup tensions. "Deer time, as the folks work with each other, they start developing an appreciation for each other; skilds." Schimoler says. "Frequently, it's an off-site meeting that forces people to work on a Collaborative

Typically, an off-site setting is needed when a reengineering project transfers mainframe functions to client/server systems. Often, a professional facilitator is called in to keep everyone focused and on track — and nevent them from throwing verbal darts.



process, and the writing on the real and board on Date. Bosons and by management, man of his

Designs Ingells started programming maleframe Cobol at Associated Georges in 1897.
But 1990 I however, a change of direction at the groomy chain, with a more to Units servers. Jappic took that as his cost to learn some shifts.
"I wanted to hotter suproff," he says. "Poople

platform, and I wasted to get the Jung on h. "He took off-side characters and on-the trading consistent. Now he is Associated General questions architect. Some IS prompers may as from an 40% of cloth apple maintained programmers; make the Jung to distributed computing. Some deat Venta to study to gain men while. Others are compared their children'd because many whalable as the number of Coole struggments of their limit. "If you you

freezent asks one.

But at Associated Grecore, where management
using to more the old jobs, marry 80% of the pro-

grammers have made the outsit.

"We shaped the circuitage dust we would say to the 20% in 90% of our open positions with entrylared people and grow our own," says Dick Lanter, vice provision of information near-less of Americand Coverne. "Bother training the new year plu the way you want them to develop, and the nestage people have you're not bring to replace Some IS managers attempt to avoid rivalries before they start to make me newcomers blyed in. We go out once or bette a year and recruit a class with the control of the con

The new crease [8] Rhending in clearly "a." The California State Automobile Association (CSAU) has put together seld-directed beams of business and IS workers that make everyone a peer. The groups of five to 10 people have brought back "phenoment l'eviable, says Chief Information Officer Julie Gabelmann, and ple talents to the table." Belping veterans gain over wellful is fare, Octobermann super. They not of our wellful is fare, Octobermann super. They not of our new dellis is fare, Octobermann super. The part of our me dellis is fare, Octobermann super. The part of our

field hears in sey. Acculture to bring them forward.

At CSAA, which recently began its more from maintranes to distributed computing, the emphasis is not talking about change. Gabelmann recently spoke to the entire 355-member IS staff at one gathering just to make sure plans were clearly stated. "It's almost got to be an over-communication," she syst. "You can't leave this

chainch. "With the proper training and encouragement, with the proper training and encouragement, even sid-sime Codel dissosium can turn into helm, Sanagaran say. The layer to seccessfully the second training to the second training training to the second training tr

Bosman is the research susager at International Data Corp.'s Unix and advanced operating environments service in Moustain View, Calif.

#### Executive Track



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Months common for the Physicians, P. Jr., company than the Standard Loren Barbarge procedures, and the Season as Selfer from, where the reas associative deep produce and older barbarategy offices. There, show was

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usions the was responsible for the fact for pury's surfacile IS. She has also worked as a sorter so intent at Anderson Consulting in Circinnati and Milant.

F.Y.L. page 80



# naro

BUT if that MIPS' RISC processor goes three times faster than a Pentium processor on Windows NT, move yourself over to that telephone.

Cuz honey

you'll be as sorry

as me.

See, I had a chance like that once, long before there were any computers, and big-Fortune 500 companies were even usin' processors like that quick little MIPS RISC thing.

It was the summer of 1908. The hot one, I was enjoyin' the breeze from the sun porch, when I saw a young man lookin' right through the screen. Scared me near to death.

'Howdy miss,' he said, 1'm sure you're aware of this new refreshment that's sweepin' the south."

Then he held up that bottle.

'Well,' he went on, 'we're lookin' for investors. 'cause we want to expand.'

Then I said, 'Mister, I sure do like your drink, but tryin' new things like that really isn't in my nature."

'Suit yourself', he says, tips his hat, and walks away.

Now, I don't have to tell you what soda pop that young fella was talkin' about, do 1?

So when I heard NEC's 250 MHz Vg 4400" runs Windows NT up to three times faster than that 100 MHz Pentium processor. I wanted to hear more.

Then they said it was the same MIPS RISC processor that Microsoft used to develop Windows NT. You can't get much more impressive than that. Plus there are lots of people just like you at-big companies usin' it already.

So I sat here thinkin', if things were different, and I was one of those stressed-out computer executives, I'd say to myself, here's a chance to make my mark, just like I coulda' done almost a lifetime ago.

Well, that's my story, thanks for listenin', Dam! I wish I had the time to tell ya' about all the companies makin' those MIPS-based systems. You better give those folks at NEC a call at 1-800-366-9782 and ask for Info Pack #185. That'll get you started.



# The righ

Want a job leading an IS department? Do a stint as a consultant.

Dy Brian McWilliams

It may seem like a circuitous route to becoming a chief information officer, but spending a half-dozen years at a top-notch management consulting firm is a powerful cureer enhancer.

\*Consulting is preferred background in at least talf of the CIO searches we do," says Beverly Lierinan, president of Halbrecht Lieberman Asso-tes, an executive search firm in Stansford.

Why do chief executives look so favorably on ina systems leaders with consulting experice? CEOs like the personalities and con nts possess. But more n skills consult netantly, consultants are masters of alignment,



he says. executives who have been consultants agree it's great preparation. Charlie Raeburn left a small IS shop is 1974 to work at Deloitte & Touche. The seven-

ng tenches you

hopped from one IS job to another, you'd have a hard time duplicating that," Raeburn says. Today he is vice president of retail information sys at John Hancock Mutual Life Insurance Co. in

Consulting also teaches practical skills, such as time management. IS-professionals-turned-con-sultants can't afford many bad-hair days. "Once you start billing clients at

\$300 an hour, you quickly realize every hour is accountable," says Tom Russell, CIO at The Standard Register Co. in Dayton Obio Russell left a bank's IS

group and spent 12 years at Ernst & Young and then worked at CSC Index. Russell is trying to may eventually consult again inculcate the consultant's

roach to time in his stad!. "It's a different mind-set," he says. "Instead of seeing each hour you spend on a project as cost, you see it as an opportunity to add value."

Another thing consulting bestows on IS profesonals is experience selling ideas to top manage

ment. That's especially valuable as companies look to IS for internal consulting. "You learn how to listen, ask questions and get a shared vision with other executives," says Susan K. Behnke, CIO at Delta Dental Plans in Oakbrook, III. Behn ke did a stint as a consultant at Price Waterhou

Hired cum Of course, you don't have to leave IS to gain

breadth or management acumen - or get a too IS job. Doug Elimana, who was recently named CIO of Westinghouse Electric Corp.'a Electronic Systems Division in Baltimore, never worked at a consulting firm. After college, he coted for an IS job at Procter & Gamble Co. "I didn't want to be a hired gun. I wanted to es-

tablish relationships within a corporation and get a chance to see changes through," Ehmann says. He says it's possible to gain broad experience in a large firm such as Procter & Gamble, where he worked for 14 years. "I had a portfolio that named nearly every function in the business." Not every CEO thinks consultants walk on wa-

ter. Some perceive them as theoreticians who don't know how to get things done. Others see potential conflicts of interest when ClOs have strong ties to a consulting firm. "There may be a tenden-cy to bring in their buddies," says Jeffrey Mitchell, president of The Mitchell Group, a search from

in Hermosa Beach, Calif.

Still, consulting remains one of the best ways to boost your career in IS - assuming you can con vince the Bir Six or one of the leading systems in tegration firms to hire you, that is. Unless you are recruited right out of college, it's extremely diffi cult for experienced IS professionals to find work ng firm, Lieberman esti in a major cons

that fewer than 5% of midcareer IS people today have what it takes to make the move. If you do make it, brace

yourself for the rigors of asulting life. Suddenly you're in a world where everyone is the best and brightest: Type A personies abound. To meet demanding client expecons, you'll be expo

and 16-hour days. It's exhitarating, but it can wreak havoc on your personal life. Rossell blames his divorce on the consulting lifestyle: "When I did get home on weekends, it didn't feel like home

Many CIOs who have been there advise getting your consulting sti

Sen K. Bohnko, CIO at Delta Dental

out of the way early in your career, when you we lots of energy and imal family com-ments. But there's also a good argument for waiting until you Transitional stress is common when you ye into consulting. u need some past

Some CIOs, such as West Doug Ehmann, gain a broad pe spective without becoming a co ccessies to draw on

to get you through it." Russell says, Just don't wait too long; consulting firms generally don't like bringing in partner-level

opie from the outside. If you think the consulting lifestyle is too stress-ful, maybe you aren't ClO material after all. Behn-ke, for one, travels as much now as she did during her Price Waterhouse days, and she's still patting to the stress days are Daley Duratil's ClO. Mee

in 10- to 16-hour days as Delta Dental'a CIO. He career plan as she approaches retirement is to get back into consulting. "Once you get consulting in your blood, it's hard to lose it," she says.





year stint exposed him to a range of technologies, industries, cultures and ideas. "Even if you



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#### March workshops

agers. Most workshops are offered later in the year in other cities. To find the time and location most convenient for you, call the contact phone

Information Systems Project Management, Phoenis, March 4-6: San Jose, Calif., March 6-3: Cleveland, March 1-1: 3: Philadelphia, March 43: Cleveland, March 20-22; Allanta, March 27-29 — Fee: \$1,295 to \$1,490. Contact: American Management Association, New York, N.Y. (Boo)

Information Management: The Next Genera-tion. Chicago, March 4-7; Washington, March 12-15 — Fee: \$475 to \$1,950, depending on days ended. Contact: Delphi Consulting Group, Boston, Mass. (617) 247-1025.

Systems Analysis and Design for Information and Business Professionals. Lake Buena Vista, Fla., March 4-7; Washington, March, sq-22 -Fee: \$1,150 to \$1,550. Contact: American Man agement Association, New York, N.Y. (800) 262

The Crossing the Chase/Inside the Tornado Seminar Series, Boston, March 5-6 - Für project managers and those incorporating information technology in the enterprise. Fee: \$1,265 to \$1,395. Contact: Marketwise, Inc., Boulder, Colo (800) 300-1846.

Effective Skills for Technical Managers. Wesh-ington, March 5-8 — Fee: \$1,495 to \$1,995. Con-tact: The Learning Tree International, Inc., Reston, Va. (800) 843-8733.

Project Management: Skills for Success. San Francisco, March 5-8; Washington, March sp-ss — Fee: \$1,495 to \$1,995. Contact: The Learning Tree international, Inc., Reston, Va. (860) 843-8733-

Software Project Planning and Management. San Diego, March 5-8 — For project and line managers. Fee: \$1,495 to \$1,995. Contact: The Learning Tree International, Inc., Reston, Va. (Boo) 843-

eclying and Managing Soltware Require-ints. Washington, March 5-8; San Francisco, arch 52-15. — For project managers developing sulements specifications. Fee: \$1,495 to \$1,995. Contact: The Learning Tree inter Inc., Reston, Va. (800) 843-8733.

Re-engineering: The Leadership Perspective. Boston, March 6 — For senior managers involved in or considering a re-engineering effort. Fee: \$1,500. Contact: Hammer and Co., Cambridge. Mass. (617) 354-5555, ext. 106.

Understanding Client/Server Computing: Plan-ning, Designing and Implementing a Client/ Server System. Chicago, March 6-7; Portland, Ore., March s8-ep; Philadelphis, March 25-22 -Fee: \$80s. Contact: Data Tech Institute, Clifton. NJ. (201) 478-5400.

Managing Telecommunications: Yechnologies Your Company Cen't Do Without, San Francisco, March 7-8 — Fee: \$1,250 to \$1,435, Contact: American Management Association, New York, N.Y. (800) 262-9699

Quality Review Techniques for Information Technology Professionals. Los Angeles, March y-8 — Tee: \$1,595 to \$1,375, Contact: American Management Association, New York, N.Y. (800) 262-9599.

Re-engineering the Computer Help Duck. Son Jose, Colf., March y-8, Irvine, Colf., March 14-15 — Fee: \$895. Contact: Data Tech Institute, Clfton, N.J. (201) 478-5400.

Communication and Interpersonal Skiller A Suminar for Technical Psylhesionals. Chicago, March as-15; Washington, March 15-29 — Fee: 51,95 to \$1,375. Corract: American Management Association, New York, N.Y. (Boo) 262-

Strategic IS Planning, New York, March 14-33 — For senior managers, Fee: \$1,350 to \$1,550, Con-tact: American Management Association, New York, N.Y. (800) 262-9699.

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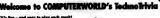
Workflow: Joining the Islands of Automation. Washington, Alarch 18-19 — Fee: \$1,095 to \$1,295. Contact: Delphi Consulting Group, Boston, Mass. (617) 247-1025.

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# Buyer's Guide: Network Management

# The future isn't now



After years of development, comprehensive network management is still just out of reach

sers want it all, and wendors promise it all it's too bad that they're often on opposite ends of the spectrum when it comes to set work amangament. Options abound, but us ers seem concerned about what inn'y yet available on brail tional actwork management platforms and suites.

Our glood article

ooks at network management from a core functions standpoint. We consider seven functions, ranging from integration to reconfiguration, that users and analysts agree they need most to perform effective network management. The bottom line in terms of products out there? They address these

tions but not as well as users wish. Users are asking for a lot, and none of the products are hitting the

wo

Next, analysi **800 Johnson** from Dataquest, Inc. and Computerworld's Publish Bryden approach network management from different angles: One looks at the future, and the other probes the current state

Additionally, you will find a sampling of the leading network management vandors and their products

Finally, Computerworld's Buyer's Satisfaction Seasonard survey brought out solid customer ratings and concerns about internetworking hardware compatibility in enterprise network management produced to the control of the control of



# V ES IT WORKING

equality.

#### Lotus

# Network manage to snuff

espite vendor promises of comprehensive, efficient network management tools, users and analysts are frustrated because today's offerings are unwieldy and incom-

plete: There are solid core functions that the products just aren't addressing well enough to perform adequate network management.

Here's a look at those functions, along with some firsthand

user experience.

#### By Avery Jenkins

#### 1. Integration

The most important function, from many users' perspectives, is integration that lets network hardware provide information to the network management software.

The net result of employing greater integration is clear. More coordination by the system means less manual labor and fewer chances of leaving gaps in network merformance.

David Brennan, director of MIS at Premier Dental Products in Norristown, Pa, was able to achieve this level of integration only by singlesourcing his network hardware and software using Hewlett Packard'a OpenView and HP hubs and routers.

Openview and Hi' hubs and routers. "The integration of the software product with the hardware is superlative in terms of being able to manage and reconfigure users and routers," he says.

For the sort of integration where the user doesn't have to "grab this data and that data from different products" and then combine it on their own, the most logical path to follow is the one Brennan chose single-wendor purchasing of hardware and software.

Tou can get a very expensive sotion that's tightly integrated, "ags Jill Huntington-Lee, a senior analyst at research firm Datagero Information Services Group in Delran, N.J. But's there one off the-shell [product] sow that can integrate network management data?" she said

management data?" she asks.
Her answer is no. "It's technically impossible" because despite the early attempts to develop common messaging schemes, common objects and common databases, most vendors continue to use proprietary

dors continue to use proprietary methods of accessing and manipulating the data. The only way to put an integrated system together is with a lot of elbow

system together is with a lot of elbow greate and a willingness to spend some money developing a custom data access and storage system that will be compatible with multiple tools and the network management system's architecture.

"We live in such a mobile society today," says Gary Smith, director of MIS at Shasta Industries, a swimming pool manufacturer in Phoenix. "I have to manage the network from

naywhere."

Chet Geschickter, an analyst at Hurwist Consulting Group, Inc. in Newton, Mass., dubt his feature "distributed console capability." He says the network systems wendors could learn a few things about it from systems management product such as Twell Systems, Inc. 'a Twoll Management Environment, which offers this capability to systems when the other contributions of the contribution of the con

On the network management side, it's technically possible, Geschickter says. But even though "it makes a lot of score, it hasn't been done yet."

vendors provide this capability, she saws, but with a catch.

says, but with a catch.
"Most provide it through [the X Window System], which you don't want to deal with because you are sending bit man praphies over the

network," she says.

The few that provide distributed consoles without imposing heavy bandwidth penalties include IBM's NetView for ADX and Cabletron's Spectrum management products, she says.

#### 3. Statistics

Statistics are key to a network manager a decisions. Without then manager is flying at night without any instruments. But there are some problems with current statistics gathering tools.

"I want to be able to monitor server utilization and network traffic utilization," says David Morrow, network manager at Acordia, Lloyd, Facciani Insurance, an insurance administrator in Freno, Calif.

ministrator in Fresso, Calif.

The trouble with some current products, Morrow says, is that they increase the drain on the systems they are monitoring.

Integration plays a role here, too. Genchicker says. While there are many tools for gathering information, "it's very fragmented," he says. Today, getting the information you need 'should not become a lifelong endeavor," but for the most part, it is.

#### 4. Export systems The addition of expert sys

In a adousson of expert systems, which would analyze statistics for troublesome trends and notify the network manager before disks fill the person series or packets start having a demolision derby, would be a welcome addition to their tool set, users say.

"We just have a big environment, and we are spread over a large area," says Kevin Goleby, LAN administrator at Farmland Foods, a multinational agricultural products distribu-

# ment tools not up yet

tor in Kansas City, Mo. Having an expert system to warn managers of potential trouble would belo reduce downtime and labor costs. "It would save a lot of travel

remote areas," Goolsby says. The problem is, these systems are s lot of trouble to put together. "The best expert systems are more general-purpose expert system shells that have been customized and integrated into the network management en-

vironment." Huotington-Lee says. Outside of the true expert systems, she cites products such as Spectrum, which has a "pretty nice alarm and filtering system," These canabilities, also known as event one relators, also can be found on Onen-View, NetView and SunSoft's Sun-Net Manager.

Maintaining security over the net work management system and the corporate network is still a major concern for network managers. The ability to monitor log-in at tempts and other common security measures are frequently provided by

basic network management sys tems. But they aren't always used according to users.

"We don't really look at ours,"

Vendors aren't yet providing strong security features, says Brian Urba, a research analyst at International Data Corp. in Framingham. Mass. He says this is because the client/server and network-based applications aren't up to the task Right now, "it's more psychological cal than anything," Urbs says. "Distributed control and reliability have

to come before security." very high," says Arnic Tomaino. senior industry analyst at Datag in Westboro, Mass. While Data est's studies show that a lot of uners want greater security features. no one has gotten their hands

around the whole issue." Computer Associates Internati al, Inc.'s CA-Unicenter was singled out by Datacuest principal analyst Bob Johnson and Huntington Lee as

having better security than most Among the LAN-based management systems, McAlee Associates, Inc.'s Bright Works appears to have the best virus-detection schemes,

#### Huntington-Lee says 6. Fault isolation Fault isolation is the ability to quick-

ly isolate a problem. In oetwork troubleshooting, just finding the prob lem is the halfway mark to fixing it. While your statistical system can tell you that the number of packets on a segment has skyrocketed, it won't necessarily tell you where they are coming from

That is why people such as Nathan Zuercher, a LAN specialist at MagneTek, Inc. in New Berlin, Wis., use moducts such as Novell. Inc.'s LANalyzer and Richard Mannix, director of oetwork services at Fuller Co. in Bethlehem, Pa., uses Network General Corp.'s Sniffer

As networks grow in size and complexity, the ability to isolate problems is getting more crucial. Zuercher says. "That is going to be very rtant down the road."

On the other hand. Hunti Lee says products such as LANalya er 'help only if you have time on your hands," Instead, she says Net View and Spectrum offer the best fault inolation by themselves. But OpenView may have a particular strength in this area because vendors such as Maxim Systems Corp. and Boole & Babbage, Inc. have made their systems NetView-com ble, which is a component of

HP's Open View systems manage difference among the products when it comes to this core capai "I think they all do it well. If we - can't handle fault management, you shouldn't be in the business," he

#### 7. Reconfiguration

While most of the previous capabilities primarily have dealt with seeing. finding and predicting network prob lems, the ability to reconfigure on the fly often represents the pinnacle of petwork management

With nodes, routers and hubs spread across the network, reconfiguring can become quite a chore unless it can be done remotely. Things in my environment has pen very quickly," Morrow says, "I

don't get a lot of potification when I have to add a lot of people or move

Morrow says he wants to be able to add, subtract, reconfigure and rebalance with as little hair-tearing as

possible. Spectrum may come the closest to the ideal because it can provide intuitive reconfiguration capabilities, Geschickter says Most reconfiguration capabilities

are provided by switch management applications, and "those applications are rather immature at this point." Geschickter says. Like most other users, Morrow

has borrowed some functionality from various systems. Nothing, be says, has all of the features he needs "You have to buy a ton of products to address one goal," be says. Echoing many others. Morrow says he hopes to see some positive changes in the coming year.

Jenkins is a freebasce writer in Kent,



empeting Embaness — A framework for distr a proposed by the Open Software Foundation.

# HOW NOTES WORKS

Saulds

#### Lotus

Control of the Contro



#### Sneak Peek

# Watch for Win 95, fault management tools

The network manager's role

Trucking mobile users



Here are a few predictions on what to expect in the network management mar-last, according to Bob Johnson. orinci pel analyst at Dataquest.

On the speide:

• The hottest area of petwork man

ment interest will be new tools and add-one that round out Windows 16 network cambiities. The focus will be on software distribution, backup support, the creation of audit trails, remote control and audit/asset management. Many publishers of help desk software will

our to race Novell, Inc. and Microsoft Corp. to try to fill the asset management void. · Fault management tools will continue to expand beyo

ply mapping devices in pretty colors. They will have redded intelligence, which will improve their ability to dict bottlenecks and performance issues. As a result,

istrators will be ter able to time the wave of Managing mobile users will

me less archaic through wative technology such a off's Mobile NetWare and rosoft's Dial-up Network Mobile product vendors

will pay more attention to com patibility and reliability as rare advances make pernance less of a primary

will see a marked imment, but there will be re focus on integration of

et and help desk man nt software. Tools will be less and less like islands and re widely integrated into a service center solution. Client/server network management tools will begin to

not through the existing resource drain that not/server environments present. Tool advances will especially pronounced in backup software as those

net management tools will continue to roll out on a dai by basis. The key question that network administrators must ask themselves this year is, when it comes to know-ing who has what, where and when, do they really want to know? Many network administrators my they are too busy to get a handle on their hardware and software invenes less able to meet the needs of the

their users do with the products on the network. Most adistrators haven't a clue and really aren't interested in learning that part of the trade. They're too busy keeping the network running and expanding simultaneously in multiple directions. The initial driver of metering will come from divisions that are interested in billing back de partments and tracking usage of specific products in

organizations they serve as all types of environments face faster change and increased fragmentation.

#### On the downside:

· For network administrators, the idea of standards still is just an idea. Be prepared for continued consternation over incompatibility. Work to minimize your exposure to new technologies outside the mainstream. They sound too

good to be true and probably are. . The reality of network management this year will be a nightmare come true. Instead of maintaining a stable personal operating systems, network administrators will try to balance multiple operating systems. This will be a year of

transition and frustration as the move to Windows 95 picks up steam and many organizations belance that with continued use of Windows 3.1 and OS/2. Security management tools will continue to increase in viability. But for every new option, there will be an army of

skeptics who will try to demon strate how insecure a secure environment can be. The result will be continued discomfort on the part of autoork administrators when they are asked to use the internet for business transactions that require security. Access control and overall security will remain a murky mens. Watch for adequate safe

guards to remain unattainable Industrial-strength security will remain a property of controlled PCs or Internet-connected

 Network, systems, applica tions and database companies will continue to edge toward one another to offer a more cohesive

view of the network and its components. But many of those arrangements will be at arm's length or slow to ma ture. Expect pockets of integration for better enterprise monagement capabilities, but realize that many technoogy sendors will continue to focus their energy on their Software metering will be slow to gain acceptance. It acally requires network administrators to understand what

#### Enterprise-level management tools

With commentary by Arnie Tomotno, a senior analyst at Datoquest, Inc. in Westboro, Mass.



#### ter N H

(800) 332-9401

udd handle network data.

http://www.ctron.com Vendor is well-respected; product is considered further along than Hewlett-Packard's OpenView. Can send re-ports on network utilization to World Wide Web servers. Product is a useful tool that updates managers about the status of the network. Web reporting could change the wide-area network manager's view and

alo Alto, Calif (800) 752-0900

Very well-known and marketed but not sufficiently scalable. Product can't handle enterprise manages

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#### NetView/SystemView

Armonk, N.Y. (800) 426-3333

http://www.ib Well-known in SNA arena. Systems management features were added to the product last year.

#### SunNet Manager

tain View, Calif. 09000 786-7639

http://www.sun.com Well-known and respected. Offers a fairly different prod uct from competition because it isn't inherently based on OpenView. Can manage multiple protocols on TCP/IP via Simule Network Management Protocol.

#### LAN-level management suites



(900) 225-5224 or (516) 342-5224 http://www.cai.com

Considered a strong contender in the systems or nt arena. Currently making headway in net-

#### mitrix for HetWare 3.0 years Sellwers, loc.

Roshu Heights, N.Y. (516) 484-5110

Allied with CA. Not as well-known as HP, IBM or Sun, but this package has solid network management features and a well-integrated interface. And this tried-and-true

#### LANDook Management Suite 2.0 and Dock Workgroup Manag

Strong integration with Novell's NetWare Manageme System (NMS) and Bay Networks, Inc.'s Optivity for NMS. Can control and observe PCs, servers, routers, printers, virus scans, network traffic and product backup.

#### ightWorks 2.1

ta Clara, Calif.

(800) 332-9966

http://www.mcslee.com Good suite of network ma some key features such as traffic or server monitori Inventory, application metering and virus prevention

## Saber LAN Workstation 5.5 McRive Aspeciates (Saber Software was acquired

by McAfee late inst year)

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c//www.nems.com (will be on-line in early March) crated desktop inventory application. Strong port-of niche-oriented tools.

Patrick Dryden

## **Smoothing** the edges

n former lives, I've developed, supported and promoted LAN products and then reported about them. Hey, networking can be fun. But over time, it certainly has become more complicated.

It took a visit to NASA outside of Houston for me to re dize the immense challenge of managing a far-flung network of mainframe and client/server sy This epiphany came several years ago, while I was seated before a whiteboard in the network administra-tor's office at the space center. The administrator dis-

grammed the complex environment that had evolved after the Apolio days.

Like an ecological system, everything was connected to everything else. One change or failure could have dire effects on the network. Separate experts monitored spe cific elements, and there was no single vantage point to

coordinate alerts and evaluate overall perfe There was no easy to see picture of resources and their

rformance and impact on one another. Thankfully, and to keep some of the fun intact, new ols for managing diverse systems and networks have

ors. First on many adm storn' list of demands in stegrated, aware software that tracks the overall pro-cess of information delivery to users and doesn't just dis-cover broken elements. The data resources manager for a pharmaceutical developer who relies on such tools de-scribed it this way. "We have enough stethoscopes. Now

enough stethoscopes, now we need a physician." But the tank is so large that one physician can't be both general practitioner and specialist. So alliances joint developments have been deployed. The big can systems management have made sure their stools for any systems.

toring servers and databases, distri and handling trouble tickets work with the leading pla rms for network management. Companies such as imputer Associates, BMC Software and Thosi Syste we become allies with Cabletron, Hewlett-Packard a inSoft so that console operators can at least launch

SunSets to that console operators can at least learnch diverse monitoring tools.

One hothed of management activity involves products that extend the remote monitoring capabilities of LAN probes. Sear ter software can examine application traffic as it flows between clients and servers.

The future is clearer dann that NASA white-board. A

whensive view of a network simplifies the task of nining which elements adversely affect applica-

Dryden is Computers corid's senior editor, network mar



#### Lotus

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Users go for platforms that recognize their internetworking equipment

By Kevin Burden



What we did... Our goal was to find out what factors led users to their chosen network management package and how well it performs. Computerment contracted First Market Research Corp. in Austin, Texas, to interview users.

Charted are satisfaction ratings for induces citied by at least a handful of users. The charts represent the number of users who rated the particular function as very important and rated the package cither "Good" or "Very Good." A New users gave an "Average" grade, and an insignificant number gave "Poor" grades. Overall satisfaction in the percent of total users who said their overall satisfaction is either "Good" or "New Tood".

	OpenHow	-	200	•	
Honieti-Packard Co. Pale Ales, Cell. (800) 752-0800 94 more servered		-			
		State Statement	3	9	
Overall		10	3		
	satisfaction	-			
			-		

#### IBM's NetView

Only IBM's NetView users listed computibility with systems management software among their critical decision factors. Well, IBM knows exactly what its users was because it bandled NetView 4.0 into an integrated network and systems mangement package called System View. IBM not only intiffied a user wast, but it also method they not practices so well that four out of fire users gave compatibility "Very Good" grades. ware also was a top priority for NeVicer uscrs— as it was for all but HP users in this survey Compatibility in good, according to survey Compatibility in good, according to user survived a "Very Good" grade. Usability in NeVier's turrength, Only two of the 30 users surveyed gove favorable grades of Good or "Very Good" rest said "Average." "It's very complexe we needed a lot of training," says Don Harrison, network manager at International Poper Co. in Memplosis. He said jost International Poper Co. in Memplosis. He said jost International Po-

the right management software from all of

#### Hewlett-Packard's OpenView

Users of Hewist-Packard's OpenView were the most satisfied group we surveyed based on their "oversal satisfaction" scores. In last year's survey, OperView was second behind Cableston's Spectrum. The difference Open-View Wersino 4.0.

cace? OpenView Version 4.0.

Our survey was designed to reach
users of OpenView? Windows and Unix
versions. However, results were merged
when opinions proved very similar.

The new OpenView is a more open, standards-compliant package, which users say is a top reason they chose it. Adding Oracle to its data storage options is one way Open-

View in opening up.

The most noticeable usability improvement in Open View 4.0's customizable tool bar and discovery feature, which lets users choose the devices to be managed. Previously, the cutire network was discovered

Stability is OpenView's strongest suit. Ten users gave "very good" reliability rations.

Netflew	September 1999	=	-
mild research, N.Y. (800) 426-2333	Statistics blokes	1	1
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20 more surreyed	-	5
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74 <sup>*</sup>	Compatibility with makes a specifical oppings	3

#### SunSoft's SunNet Manager

SexSoft's Surbet Manager works in a Suscentric world. That is, it run on Su hair, it run on Su hair, systems workstations, requires Sun GS or Solaris and uses pictures to diaglas, of Sun's Sun ceapineess in its interface, sury self-right Sun ceapineess in its interface, sury self-right Curte, a solvanee programmer at Jiff Drug, Inc. in Pittaburgh, Sunbet Manager will discover non-Sun equipment, but it docum diaglay it graphically. Internativothasis in where Sun's broad third-party support helps out, and users as so Sun's internetworking compatibility is one-

of their chief reasons for choosing Sun. Sun scored very well in another user po ority: network operating system compatible; By. This is mostly because SunNet Massa er was developed for Sun's own operating

systems. Both usability and reliability accred very well. None of the users complained a boat SunNet Manager's stability or complexity. However, 13 of the 30 users surveyed said they wouldn't choose (5) of didn't know if they would knose (5) SunNet Manager again. That potential turnover rate is the highest strong the four venders.

#### Cabletron's Spectrum

Cabletron's Spectrum Enterprise Manager 4.0 lures users with several unique fetures. It uses a relical intelligence to helpsobe problems by learning from past experiences, and it's based on a true client/ server architecture, which some users ranked as n primary reason for boying

Spectrum.

Because Cabletron also manufactures is ter networking equipment, compatibility in a nonissue for many uners. "It just made" sense to go with the product from the ven-

dor that makes our devices," any Due Paton, communications manager at William Beaumont Hospital in Bayal Osh, Mich. Spectrum users gave the most intercable grades for internetworking compatibility. Fourteen users gave Spectrum's user in terface favorable grades, the most any product received. Part of the reason is its distributed architecture, which allows usliated graphical user interface to access

Burden is Computerworld's ser

wee- Firing Line/Scorrecard. aputerworld.com) JANUARY 29, 1996

# Spectrum Carlotte Spectrum Car

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and chankse functions by learing you reuse code quisbly via dragand-drop object technology. With Power Objects, you can insert and delete data located on a server DBMS with full transaction support and no coding whatsoever. The same task in Visual Basic would require many reclandatin lines of ode. Visu can even ma Windows apply unmodified on a Macjatosh." computer and vice versa, And Power Objects uses a stronging language you alreally know, standed BoSIC

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# In Depth

# dream or

SAP positions you for the future

By Jeff Coomer

et ready, cynics: SAP AG's R/3 is even better then a dream — it's a reality that you can look forward to waking up to.

The competition likes to dismiss the accepnance of R/3 as herd metaliky, but a tot of highprofile companies have bet on the system for good reasons. Black & Decker Corp. became interested in R/3 in 1933 to replace our aging order-falfillment system. Since then, we've expanded our commitment to include the financial

modules, and we are evaluating the manufacturing and forecasting modules.

forecasting modules.

Like most consumer-goods
manufacturers, Black & Decker faces the challenge to efficiently produce and deliver
products to an increasingly

R/3's tightly integrated functionality lets us manage the many processes that make up our supply chain — forecasting, deploying inventory and taking and shipping orders, for instance — as a continuous business process rather than as a series of disconnected hand-offs.

R/3 also has the functional depth to be attractive to companies that are interested in gaining a competitive advantage through highly individualized business practices. This is particularly true in the area of order fulfillment, which is critical to achieving a key Black & Decker business objectives. The content professional professional professional proting and the professional professional professional professional depth of the profe

From a technical perspective, there simply aren't that many chinks in the R/3 armor. No, the graphical user interface isn't fully Windowscompilant. And yes, the development language



Coomer is director Tousson, Md.

Touson, Md.

(ABAP/4) looks a little too much like Cohol, but ment Corp., are implementing R/3 as the

so what? The architecture has three tiers and is easily scalable. The system comes with integrated performance monitoring and changemanagement tools, and an active data dictionary

sits underneath it all.

And if you're worried about getting good technical support from your hardware vendor, it belps to know that the major players, including IBM, Hewlett-Packard Co. and Digital Equip.

ment Corp., are implementing R/3 as their inter nal enterprise system.

Criticism that SAP is an arrogant company and difficult to do business with strikes me as a display of American arrogance. The rigid sales and marketing practices the German company dis-

marketing practices the German company onplayed a few years ago (SAP practically refused to sell R/3 to Black & Decker in 1993 because of concerns about the multivendor approach we

anguage 10M, newet-racture Co. and Digital Equip. Dream, page 102

COMPUTERWORLD (http://www.computerworld.com) JANUARY 29, 1996

In June 1993, after an extensive business process redesign of our logistics and acc



What follows is a true story from a recovered SAP addict. Let's just call him "Bill." After you've

# Don't jump on the SAP bandwagon

ckage. I was a member of that team

When SAP R/3 became a serious con sed some concerns about what I had heard out the lengthy time and high costs of imple-entation, the lack of Bexibility, the difficult faces, the lack of reference sites and the eany's "do it our way or not at all" h SAP executives assured our team that SAP R/3 erent from earlier versions. Unl R/2 mainframe counterpart, R/3 was flexible and easily customized. These honchos encouraged

I was still wary, but after all, R/3 was the only "fully integrated enterprisewide client/serverased software" game in town.

Besides, SAP assured us that R/3 out of the box would meet 85% of our logistics require-ments. After being wined and d at the annual SAP cub g (ahem, the annual Sap phire user group meeting) and being mesmerized by R/3's click front end, our whole team was

ooked. I have to admit, I was impressed. But things started to sour quickly. Here are ome of the lowlights:

 We interviewed various Big Six consulting firms and found very few people trained and ex-perienced in R/3. The delay in finding qualified heard his chilling tale, maybe you'll realize that SAP R/3 isn't all it's cracked up to be. Hi, my name is Bill, and I've been free of my addiction to SAP for 18 months now. I used to be people seriously affected the start of the project. The people we could get were extren the division chief information officer at a large ive - we had to budget between 25% and 100% more than SAP suggested for experienced R/3 consultants. The consulting firms' attitude

was, "take it or leave it." It was a seller's market. For most other technologies, the industry rule of ceivable processes, an empowered company team set out to select an enterprisewide software mare, page 103 JANUARY 29, 1996 (http://www.computerworld.com) COMPUTERWORLD

CONTINUED FROM PAGE 100

were considering) have been tempered by a solid understanding of the U.S. market. Based on feedback from its annual customer survey. SAP has improved its training

of expertise" to address the unique requirements of specific industries. To me, these are signs of a responsive

I'm also convinced that the claim that R/3 is difficult to implement has less to do with the software than with the challenge to think outside the silos most of us have

and contempolecused company

nies enter an R/3 project with the organia tional dynamics and business practices in place to accomplish anything that requires cooperation across functional boundaries. much less to implement a system as inte-grated and option-rich as R/3.

It may come as bad news to some of these companies that they'll have to invent such practices to succeed with the system. The good news is that they'll be inventing

their future. R/3, like any system, can be implemented well or poorly. Compani that have a strong sense of purpose, good project management disciplines and a comsent to terromode and staff density ment will be successful with the product. Those that don't, won't

With regard to the relatively high cost of plementing R/3, I'm the last guy to de-nd SAP's pricing policies. But keep those costs in perspective.

Black & Decker's investment in R/3 rep resents a once-in-a-generation reposition

ing of our systems infrastructure. The cost we'll incur during the next three years to create the foundation for the pany we will become over the next 15 years is small compared with our expected revenue during that period.



When you consider the potential b ness costs of being constrained by a bargain-basement solution. I'm not con-vinced that implementing R/3 is more ex-

And the project cost is more controllable than the SAP-bashers would have you be-In particular, if you're fretting about the high cost of third-party consultants to docu-

ment your practices and perform the "gap analysis" between SAP and your target en vironment, do what Black & Decker did Don't use them.

We completed our pilot in just over a year with one full-time consultant from a local company and one or two part-timers from SAP That's not out of line with my experi

ence implementing other packages.

Americans love to pick on a leader, and ing so sometimes can serve a useful pur pose in keeping the leader honest to its vi

But if the critics really think SAP R/3 is the nightmare, what's the dream? Another system the market has overlooked?

How about staffing up for an exter round of in-house development or ign your competition and praying that those

past the contary change? Better yet, how shout glaing some of your homegrown sys-tems to parts of four or five vendors' sys-

If this is your idea of a dream, I'll stick





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### CONTINUED FROM PAGE 101

thumb is that you'll spend \$2 on consulting support for every \$1 you spend on a software license. Convincing senior management that we needed to budget \$4 to \$8 for SAP consulting for every \$1 are were spending on software licenses wasn't an

casy tasă As if this weren't enough, we found out (after we had agreed to pay the outrageous rates) that some of these consultants were taking the same courses that our internal neonle were taking

### Rocky path

a Once we got started, it soon became ap parent that R/3 wasn't what it was cracked up to be. SAP announced that some of the functionality we required wasn't available at the time. Work-arounds were the order of

For example, we originally had planned to use our existing, validated data repository to feed customer and product data to R/3. This should have been a breeze - our ory was Oracle; SAP's database was Oracle. It turned out that the feature for accessing data outside SAP's Oracle database

didn't quite work. The customer and product data that R/3 required would have to be entered and vali-

dated through the R/3 software. Worse, when we tried to use R/3 to update and vali date non-R/3-related data (to ensure the integrity of our data), we couldn't. The soft ware wasn't that open

 SAP had agreed to make cortain changes to meet my company's industry-unique accounts receivable requirements. SAP's accounts receivable module is built on the

premise that a cus tomer orders a product, it gets shipped and invoiced, and the customer pays - end

Our business is different; the customer sends us ney, we send him the product,

then we send a rec onciling invoice. It took several bours to comince an SAP vice presi

couldn't do it their way and keep our comwe advantage SAP wouldn't make the promised cl es in its core package. We eventually pu

ed a third-party accounts receival package. That meant dealing with the usu interface problems - incompatible file formats, data inconsistencies, a steep learning curve - and the usual finger-pointing when things didn't work out.

· SAP didn't mislead us about the interfaces. The company told us up front that

interfacing R/3 with our systems would be s nightmare and our responsibility. SAP was right. Can you believe that after all these problems we continued to ignore the ious? We were so desperate for a silver ullet that would make information visib across the enterprise and that would magically make it easier

4

for our customers to do business with us. We couldn't bring ourselves to cut our losses

### utta there I left the cor In June 1994, It was accounted that no

one was ready to Esten to reason. From what I've heard, the company went live with one sines unit just th - about a year behind sched-

ule. In all this time, I have felt alone in rec-My colleagues mean about R/3's high costs, the lack of qualified people, the long time to implement and of being forced by ers to "go SAP

But information systems staffs contin to bow to the SAP gods, paying homage to been by contributing large sums of money while waiting for a miracle to occ For example, I know of one major ph

scentical company that decided to go with R/3 in July 1994 and, despite has yet to implement its first module, is deal with a 300% cost overrun. The chief financial officer is heolard. I

told me each of the Big Six consulting firm bidding on his re-engineering and SAP in tion told him SAP was a good deci sion. As if their vested interest would let them say otherwise

Maybe things will change, and I won't feel so alone. There are more press reports that companies that have large invests in SAP are growing concerned that they haven't yet ieen a return on those inv

Companies that can't afford SAP also are making some noise. They are looking for SAP alternatives that are flexible, cost-effective and faster to implement.

Vendors such as Cantoc Business Sysms, Inc., Bean International, Inc., Re entens, Inc., Oracle Corp., Datalogic International, Inc., System Software As cistre, Inc., Marcam Corp. and Qud, Inc. are being considered. Some user or s can't afford to get hooked on SAP sim

Well, that's Bill's story - sad but true Others will wake up to find their be lines adversely affected by the SAPaholics in their midst who continue to throw mor ey at SAP implementers and hope to come

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# **Computer Careers**

# **Network notability**

A shortage of skilled network managers is creating high demand, high regard and high salaries

### By Candee Wilde

One of J. B. Shah's top priorities in the new year has been to find a network manager who can help support Electrogias' interna-tional network and incorporate client/ server and internet applications. As director of mar

mications at the Santa Clara, Calif. based subsidiary of Gen-oral Signal Corp., Shah considers this new ition "a critical part of the IS area." Officials at other companies has

Virtually all the firms that participated in the 1995 salary survey conducted by Edward Perlin Associates, Inc. - a management consulting firm in New York that specialises in compensation practices in da

For these managers, total compensation cluding salary and benefits, ranges from e "high \$80s to \$120,000, with some as

high as \$160,000," according to Perlin As-

But these impressive naturies come at a price, judging from Shah's list of 17 areas of responsibility for the new position — to be ed network support manager — at Electroglas. Duties will include planning and implementing LANs and WANs for domestic and international sites, implementing enterprisewide Internet services and ensuring the network is robust enough to support future client/server development. David McNicholas, executive vice pre ent for systems marketing and development at Avis. Inc. in Garden City. N.Y., in

inced that the future is bright for net-Network management, "is an exploding area in terms of opportunities and choices, McNicholas says. And the competition is dramatically less. There are thousan people looking for jobs in come relatively few who understand the different network technologies used to move data

The demand for qualified network m agers definitely exceeds the supply, accord-ing to Peter Brown, vice president for tele ations at conglomerate Cargill, Inc. is





neapolis. Brown's network mar ment staff comprises people with titles such as manager of service, strategy manager, transmission manager and technical

These people have technical knowledge ut not necessarily a technical degree, He says the most important quality he oks for in a network manager, beyond

technical knowledge of the integration of voice and data networks and the funds tals of client/server computing, is "an ability to deal with ambiguity and continuing

This flexibility is critical. The challenge for network managers is to keep abreast of the rapid changes in technology, says Dan Gonos, telecommunications manager at Domiso's Pizza in Ann Arbor, Mich. "The people who try to stand still are go-ing to be left behind."

Wilds in a freehance seritor in Faston Cons. ployees and are apt to let them learn as

# Temperate transitioning

Information systems employees must take their own steps to guarantee a smooth start on the new job

By David Weldon Desperate times call for desperate mea-sures. And because information systems departments continually hire under despernces, the burden is on new yees to make the job transition quick-

But Xeron Corp. in Roghester, N.Y., has xperienced firsthand the trouble that can appen when new hires go it alone through heir learning curve: Employees feel undi-

ohed, frustrated and take longer to get acquainted with the job. longer to get acquammen wan tree poor.
"Our outside hires were being left to
their own talents to find their way around,"
says Robert Monastero, director of human resources for the IS division. Because the company had gone through a lengthy peri-od without hiring, managers had forgotten about the need for a transition period. Mon-

"If you have those skills, terrific. But there are a lot of obstacies to overcome dur-

ing the first 90 days on the job," he says The experience at Xerox is typical for many IS organizations, which often hire as an emergency response and spend little time helping new hires adapt to the job. The big problem when you join a new company is how does that company do work," says Stuart Kasin, senior vice presi dent of worldwide operations and adm tration for IS at Lotus Development Corp. in Cambridge, Mass. IS managers often are too busy to spend quality time with new em-

they go. Kazin recommends that each new sloyee seek out a mentor who can help him make the transition. "You should learn quickly what the business is all about, what are the users' biggest problems, and decide how you fit into that picture," Kasin says. "You have to sak yourself, 'How do I add value? If you don't know, go ask." Such an attitude was the reason Steven Barrett has had a successful transition to his new job as director of networks and unications at Lotus. Barrett was ired by Lotus only five days before the

company's acquisition by IBM. Six months later, Barrett looks back at a transition that was successful because he was aggressive in building relationships, seeking out training and evaluating how he

could help the company meet its mission.

When I joined the organization, I met
with everyone one-on-one. I asked s lot of questions]," Barrett says. "Management wanted someone who could hit the ground running, and one of my biggest as the ability to understand the business

and boil that down into my job."

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# **Marketplace**

# Distributed's Downside

Disaster recovery presents new challenges in post-mainframe era

### BY ALAN BADDING

he nature of disasters haus' changed. But for IS managers, distributed computing has made disaster planning and recovery for floods, fives, earthquakes, tornados and hurricanes more difficult than it was a few years ago.

una are years ago.

Critical systems and data are special throughout an organization. After a disaster, you can restore the glass house at a hot site, but the organization remains effectively dead in the water because critical systems and bey data reside on departmental servers and thousands of PCs. And the orthory was the contract of the property of the property

"It's not enough to recover the glass hause. Today, we have to recover the entire dair blaste environment." usy Tony York, director of business resumption services at Charles School & Co., an investment firm in 'an Francisco, Every LIAN and server in treated as a liste, individual data center, she says. Each has its own disaster plan, including hot size arrangements and disasterchalling hot size arrangements and disaster-

recovery procedures.

"Network recovery has emerged as the most difficult part of all," says Sephen Goodson, a group manager of IS controls at Ryder System, Inc. in Miami.
Traditional hot sites are the mainstay of

Traditional hot sites are the mainstay of host-based system disaster planning. But today's beterogeneous distributed environ-



# What kind of disaster will hit you? If the natural and man-made disasters, storms and floods top the list when it com



you have purchased grossly more capacity than you need so every server.

"The hot site is still the

The hol site is still the center of the recovery, Goodson sups, but a complete recovery involves several elements. For instance, Ryder uses quick-ship programs for systems flast operation independently of the manufacture convicuous manufacture convicuous and a Condition, the hot site, it has a separate plain or the recovery of this private network, Ryder LINC.

ment is vastly different from the standpoint more p of maintaining a hot site. A hot-site subscriber is an likely to need any of a dozen Unix-based servers with widely different configurations.

Many pieces to solution
There are a variety of approaches to the

distributed system disaster recovery problem," notes, Jeff Marinsten, president of leam," notes, Jeff Marinsten, president of Contingency Planning & Research in White Pains, N.Y. Besides conventional but sites, the options include quirk-ship programs and internal alternative sites. No one approach will solve the entire problem. Instend, experts recovarge organizations to piece together a plan using ideas from all the different approaches. more popular, Marinstein observes. With these programs, the organization identifies the servers and configurations that it will need in the event of a disaster and prepays a portion of the cost of the equipment to en-

sure that it will be ready in an emergency.

'Quick-ship programs are nice, but they are not realistic for a large organization,'
York adds. Instead, they form one component of a comprehensive recovery plan in

conjunction with a hot site.

An internal backup and recovery plan also nounds, good in theory but proves less
effective in practice except in small, shorttern situations, in this approach, copies of
data and applications are stored off-site and
reloaded onto mother of the organization's
servers at another site. One business until
can't back up another. York warms, guiless

Users present another problem. When we talk about clearly erver processey, we're really talking about recovery of the users," Mariantain says. Useful recently, recovery of users hand been part of the hostist vender mean. "After the [1809 San Francisco] earthquales, we realized that we needed a started to work with Considers, "Vark says. The three major hos-site venifors, Camditon, Bills and Sungard Recovery Services, Inc., ministain regional recovery cervices, Inc., ministain regional recovery cer-

ties, a variety of Unix and PC servers and an array of network connections, workstations and phones for end users.

Radding is a freelance writer in Newton, Mann.

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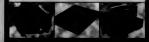
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# Companies in this issue

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# **Contacting CW Editors**

# At the core of merger rumors

A few weeks ago, everyone was talking about the Blizzard of '96 - where, when and how many inches. This week's buzz is about the possible merger between Apple Computer, Inc. (AAPL) and Sun Microsystems, Inc. (SUNW) — when, why

and how many dollars. After posting a 369 million loss in the fourth quarter last year, Apple in Cupertino, Calif., faces tight margins and increasingly still competition in the low-end desktop PC market. With a stall compression in the nowcoal occasion to make properly positioned and financed partner, Apple hopes to shake free of the doldrums it has found itself in this past year. But

what is it about Apple that interests Sun? Besides Apple's revenue stream and an estimated 20 million users worldwide, Apple's desktop presence could complement Sun's networking and Internet strategies. 'Sun would become vertically integrated from the high end with (ibs) existing servers and workstations, (down) to the low end with dealtop personal computers,' mail Stebard Buldry, an analyst at Olde Dis-

count Corp. in Detroit. Daniel Kunstler, an analyst at J. P. Morgan Securities in San Francisco, agreed. Apple's desktop machines would bring net-working value to Sun by allowing it to "stretch out to everybody

no matter what platform they used," he said.

Sun in Mountain View. Calif. also stands to main in the lear net development and server area. By combining Sun's success with Unix Internet servers and Apple's Internet server success, Sun could field a formidable team.

Certainly, there are risks for Sun. With Apple's annual reve nue nearly double that of Sun, "Sun would be integrating a much larger organization — lone) that is operating with con-tinuing losses," Baidry said. This "could be a distraction from



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# IS must deal with 'net devices

CONTINUED FROM PAGE 1

First National Bank of Chicago for example, plans to install these machines in most of its several thousand branches by the end of

next year "We can't offer [graphical] marketing information on our ATMs or bank-by-phone systems, but we could offer details like that on the [World Wide] Web," said Kurt Heuberger, product manager of Internet development at the Chicago-based bank

### Web wins

nated teller machines, or ATMs, can't offer the graphics and interactivity with users that the World Wide Web can, he said, "If you want to see how the latest interest rates might play out on a second mortgage, you wouldn't have to wait in line for custome service," he added.

A huge Sun shop already, the bank has been approached by the vendor about buying in to Sen's Internet appliance idea. Sua doesn't have even a prototype to demonstrate, but that could change if it buys Apple

Computer, Inc., Heuberger Apple's Internet device desig has been licensed by Tokyo-br Bandai Co., which plans to ship

products in March (see chart). And a large public service con pany in Canada is talking with TransPhone about buying "poter tially several hundred" units of its device, according to a source close to the negotiations

SunRiver's Internet Terminal, meanwhile, was built to rue mininture applications created with Sun's Java programming lan-

Companies could use Int Terminals to cut the cost and hassle of maintaining large PC instal-lations, said Gerald Youngblood, president and CEO of SunRiver. If end users linked to internal internet networks downloaded Java applets for word processing or other routine tasks only as need-ed, "then IS wouldn't have to worry nearly as much about updating

PCs and installing new versions or software on individual machines." Youngblood said. Adopting as electronic comsterce strategy. See page 69. nance, said Bob Moran, director

Acem Cembridge, England	NetSurfec a stripped-down PC for on- line use only	Less than \$500	Q1 1996
Bendel Toyko	Pippin multimedia box, based on Apple's Power Macintosh	\$500 to \$700	Match 1996
IBAL Armonk, N.Y.	InterPersonal Computer, a stripped- down PC for on-line use only	\$500 to \$2,000	Fall 1996.
Oracle**	Network Computer, a stripped-down PC for on-line use only	Less than \$500	Qs 1996
Philips Eiadhoven, Netherlands	Kit to convert TVs or Phillips' CD-l " CD-ROM player	\$150	October 191
Segs Tokyo	Kit to convert Sega's Saturn game box	\$100	1996
SunRiver Austin, Texas	Internet Terminal, a stripped-down PC for on-line use only	\$500 to \$1,000	March 1996
TransPhone Ottown, Ontario	Telephoneflaptop/internet terminal with credit-card swiper	Less then \$500	March 1996

# SAS unveils client/server applications

CONTINUED FROM PAGE 1

182 million in revenue, SAS is the largest privately held software

company in the world.

"What SAS is doing is building a structure that allows cross-ac cess between various discipli such as human resources and fi-

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of decision support at Aberdeen Group, Inc. in Boston.

That structure bolsters users' ability to easily delve more deeply nto a wider array of information, Moran said.

Herent strength The power of SAP and Oracle financial applications lies is their ability to process transactions

The SAS finance package, by con-trast, will have limited general led-ger capabilities and will focus on its core information access and reporting capabilities, company of 6

The software will provide "an opporto nity for users to do reporting at a higher, integrated level," said Mark Moor-

velopment at SAS "It's a win-win for everybody, uners and applications ven-

lan, an analyst at In Data Corp. in Framing anies such as The Gallup Organization, a market re

search company and SAS user in Lincoln, Neb., now use a combination of spreadsheets and custom reports to consolidate and analyze encial data from different accounting systems. Each new report requires a new custom program, many of which are built

dors," said Clare Gil-

The SAS actalyze data from what are now

> package also we or need to write rus

SAS user at The Robert Plan Corp., a ice company in Uniondale, N.Y.

OLAP, or on-line analytical pro-cessing technology, is at the heart of the client/server applications and allows the cross-platform data access, SAS multidimens in navigation tools also are incom porated into the packages.

# Corel emerges as likely WordPerfect buver One observer agreed "I think it is easier for Novell to tell its customers, 'Look we are

selling the WordPerfect franchise

to a large, regutable software company that has workfwide distri-

on and a prov

track record

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CONTINUED FROM PAGE 1 base of users.

Novell [CW, Jan. 2] but was slightby outbid by Corel, sources famil

ior with the talks said. IBM, Computer Ascistes International, Inc., Claris Corp. and a group of investors led by independent consultant Will Fastie also were mentioned as car-

ly suitors. Only Fastie's pressed interest in making an actual bid for the company, Fastie uid he was unable to

ertedly influenced Novell's decision to tique talks with Co-

rel was the com ion. Sources close to Novell said selling to Corel would prother transition for Perfect's large installed

who Bain is and products.

At least one observer isn't convinced Corel is a good match. "There isn't a natural synergy." but still, the cu said Chris Le Tocq, an analyst at Dataquest, Inc., a market re-very different."

search firm in San Jose, Calif. There isn't necessarily a fit at the product level. It igives! Corel an-other channel for selling Draw, but still, the companies are very different, and the custo

# Java is hot, hot, hot

Charles Babcock

set Java? A lot, studen Wide Web rs to life with rd cartoon characters and lifelike tions. It's the first language d to function over a netrk. And it has built-in safeords against viruses, which

makes it a lot safer to download cude from the Internet. You routinely run the risk of porting a virus if you download a file from the internet on most ns. It's hard for the originator of the file to protect you be-cause viruses, which are injected by an outsider, are hard to detect

in compiled C code Java has a built-in verifier. hich can check the runti which can creen applet — a code of a Java-based applet — a self-contained, object-based application above compiled tion — against the compiled raion. Any discrepancy sends up a warning flag.



the 'net doesn't try to write to your disk. access your files or direct random looks memory the way a C program can. It won't try to add to one of your C or C++ programs or access ther Java applet. all known avenues of

a virus attack. Java also is platform-indepenpart compared with predecessor puages. It translates its source code into an intermediate byte code. These short instructions are transferred over the network to call specific methods and functions when run through the Java

expreter on the client, Arthur van Hoff, the senior staff engineer at Sun Microsystems who wrote the final Java compiler, says. The verifier can ask. Is this set of byte codes generated by a legal compiler? The program can't lie about itself," In that way,

Java's verifier provides a way to check whether the original pro-gram was tampered with, van

Java is C++ "without the guns, knives and mace," says Kim Polese, Java marketing manager.

> This makes Java a unique lan-guage, designed to shine in net-working. If a bank wanted to send you an applet to check your retir ment fund balance, you could import the code without fear that someone would be secretly looking for your account identification

Java also appears to set a new standard for portable applications over a network. Sun has ported wa to run on the Macintosh, Windows 95 and Windows NT operating systems and Sun's Solaris. Independent software comhave ported Java to HP-UX, OS/2 and NextStep. Sun offers Java source code free to developers who put their ports back into the public domain for other developers, said Kim Polese, marketing manager for Java. Java binaries can be downloaded for free from the 'pet. Java is structured

to simplify some of the vagaries of ob-ject-oriented languages. C++ allows multiple inheritance for a class; Java fol-lows Smalltalk is allowing only

single inheritance. Java also prevents you from creating pointers to private data; this can be done inadvertently in C. A lot of the creative work be-

hind Java was done by a team lead by James Gosling. Van Hoff. known in the industry for dogged-ly simplifying briar patches of code, termed Java "a bit of a mess" when he got it. He set about cleaning it up and rationalis-

something that looks like C++ "without the guns, knives and mace" or all the hidden traps of that complicated language. Part of Java's popularity is a backlash among C++ programmers who, after years of work, acknowledge to their fellows and occasionally to the press that they haven't man-

tered the language. Finally, Java's appeal isn't just technical merit. It makes the Web a whole lot more fun than it was ever going to be under Hypertext Markup Language. Now when you log in to a Web page, a coffee cup steams away and snippets of video action appear.

So put Java on the front burner. Barnes and Noble in down

Seattle has sold more than 1,000 copies of Bill Gates' The Road Ahead, while it has yet to stock Hooked on Jara, one of the leading how to do a hot Web site books. But at Stacey's Bookstore in Palo Alto, Calif., Hooked on Jesu, by van Hoff, Sami Shaio and Orce Starbuck, is outselling Gates' book 3-to-1. In December and Jan-uary, Stacey's sold 101 copies of The Road Ahead and 318 copies of the Java book. "We could have sold another 500 if we had them," a store spokesperson said.

Babcock is Computerworld's tech nical editor. His internet address is charles babenek@excom.

Promiscuous Prodigy

Sears, Roebuck may be trying to decide whether or not to sell as 50% stake in Prodigy, but in the meantime, the on-line service is showing its softer side on packages of free nothware that were sent to consumers last week. On the cover of the package is young, beautiful, ample-breasted, lip-parted Amber, who "got into Prodigy Chat on Thursday, 11:36 p.m. It all started when I typed hello." er is selling what is billed on the package as "the

No accounting for accountability
Some Tanden employees aren't taking kindly to the appointment of Roof Pieper as president and CEO. The new
accounties last week intid high-level managers at a meeting that they would "be held more accountable" to the
accountabile to the ups and downs of Tundern's business. One such manag-er asked whether that meant Pieper himself felt more acountable for the way the performance of UB Networks as been "tanking" Tandem's profits. Pieper was presi-ent and CEO of UB Networks from 1993 until he joined Tandem early this month. One Tandem insider obewed, "It's kind of strange to put the head of a money sing unit in charge of the entire co

Excedrin headache #38947

ret Service agents considered a satirical Web page as arent to presidential candidate Sen. Bob Dole, It all eried last mouth when The Dallas Morning Neus de-ribed political activity on the Internet, including "the uplooling Head Page." There, surfers can make the safe of politicus and orbebrities such as Dole, Rush

Limbough, Tom Hanks and Bill Gates virtually es Some touchy Dallas-ite alerted the local Secret Service inch, resulting in a visit to page host Virtual Visions, a Web design group in Rochester, N.Y.

Freudian slips I and II

First, while Lotus is bundling its SmartSuite desktop ap-plication suite with PC makers AST, Epson and IBM, the information kiosks at the Lotusphere '96 conference in Orlando were all Compaq machines. Oops! Then, many attendees were left wondering about IBM Chairman Lau

The 5th Wave by Rich Tennant



Gerstner's clusing remarks at his keynote speech, where he called Notes 4.0 "the product for the next two years." Lotus officials assured users that he didn't mean Notes would go away in two years; what he really meant to say was that Notes 4.0 would have a significant impact on the market in the next two years. Ub-buh.

Object of desire

While relational database-mongers such as informits and Oracle continue to plow ahead with hybrid object/rela-tional databases, Computer Associates is close to deliver-ing a purely object-based model. The Islandin, N.Y., softmg a purrey object-oasen moner. The istandis, N.Y., soft-ware levishins this week will Both out the status of the object system it has been developing with Fujitsu based on the lister's ODB-II technology. Sources any the sys-tem, which is optimized for CA's Ingres, was designed to store video clips, compiler-sided design snippets and other multimedis-type objects.

The new paradigm sems to be object-oriented press relucies. We may be on the cusp of an emerging trend here — reus able chanks of press releases. A data marchosai amouncement this month by Oracle, Data General and NEC included six paragraphs that were lifted almost entirely from a similar press release that Oracle released last September with Heulet-Packard and EMC. Only the company ament and a few words here and there were changed to present the immocrat. Whatever happened to cre-ative writing? To contact Computer world about awas items or tips, cell one 24-hour noise mail to fine at (2600) 820-8555 or our tell-free number at (600)-343-6574. Hous or Maryfron Johnson con be reached by phone at (508) 820-8179 or via the Internet at margin

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